Ahsay Offsite Backup Server v4.4

User's Guide

Version 4.4.4
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Table Of Content

1 Overview 6
1.1 Benefits 6
1.2 Features 6
1.3 Security 7
1.4 System Requirement 7
2 Installation 8
2.1 Installing Ahsay Online Backup Manager 8
2.2 Installing Ahsay Online Backup Manager on NetWare 10
2.3 Trouble Shooting 11
3 Quick Start 12
3.1 Quick Start - File Backup 12
3.2 Quick Start - Microsoft SQL Server Backup 16
3.3 Quick Start - Oracle 8i/9i Backup 20
3.4 Quick Start – Lotus Domino/Notes Backup 24
3.5 Quick Start – Microsoft Exchange Server Backup 28
3.6 Quick Start – MySQL Backup 33
4 Using Ahsay Online Backup Manager 38
4.1 System Tray Launcher 38
4.2 Logon Dialog 39
4.3 User Profile 40
4.4 Backup Set 42
4.5 Backup Logs 51
5 Backup/Restore Files 52
5.1 How files are backed up 52
5.2 How to backup files 53
5.3 How to restore files 56
5.4 How to perform seed loading of your backup data? 59
5.5 How to save an extra copy of backup on local hard disk? 61
6 Backup/Restore Oracle 8i/9i 63
6.1 Requirements 63
6.2 Overview 64
6.3 How to backup an Oracle Database 65
6.4 How to restore an Oracle Database 68
7 Backup/Restore Microsoft SQL Server 7.0 / 2000 71
7.1 Requirements 71

7.2 Overview 71
7.3 How to backup Microsoft SQL Server database(s) 72
7.4 How to restore Microsoft SQL Server database(s) 75
8 Backup/Restore Lotus Domino / Notes 82
8.1 Requirements 82
8.2 Overview 84
8.3 How to backup Lotus Domino / Notes database(s) / file(s) 84
8.4 How to restore Lotus Domino / Notes database(s) / file(s) 88
9 Backup/Restore Microsoft Exchange Server 2000 / 2003 90
9.1 Requirements 90
9.2 Overview 90
9.3 How to backup Microsoft Exchange Server 2000 / 2003 92
9.4 How to restore Microsoft Exchange Server 2000 / 2003 96
10 Backup/Restore MySQL Server 99
10.1 Requirements 99
10.2 Overview 99
10.3 How to backup MySQL server 100
10.4 How to restore MySQL server 104
11 Email Reporting 105
11.1 New User Report 105
11.2 Forgot Password Report 106
11.3 Backup Job Report 107
11.4 Setting Change Report 110
11.5 Inactive User Reminder 111
12 Web Features 112
12.1 Install Ahsay Online Backup Manager 112
12.2 Update User Profile 112
12.3 Request your forgotten password 113
12.4 Restore/Delete Backup Files 113
12.5 Decrypt backup files on CD/DVD 114
12.6 Review backup jobs 115
12.7 Review storage statistics 117
13 Frequently Asked Questions 119
13.1 How do I uninstall Ahsay Online Backup Manager? 119
13.2 How is data privacy maintained? 119
13.3 How do we backup "Open Files"? 119
13.4 What should I do if a backup error is reported in my backup report? 119
13.5 How do I backup 300GB of data through the Internet? 120
14 Common Errors 121

14.1 The process cannot access the file because it is being used by another process 121
14.2 Access is denied 121
14.3 Quota Exceeded 121
14.4 Source file does not exist. Index corrected 121
14.5 Checksum incorrect 122
15 Appendixes 123
15.1 Further Information 123

1 Overview

1.1 Benefits

- Daily backup your files, Microsoft SQL Server 7.0 / 2000, Oracle 8i / 9i, Lotus Domino/Notes 5.0 or above, Microsoft Exchanger Server 2000 / 2003, MySQL 3.23.42 or above
- Fully automated. No administration required.
- Send business data offsite to a secure data center
- Protect business data against natural disasters, e.g. fire, flood as well as terrorist attacks.
- Save you time and money
- Easy to deploy and maintain

1.2 Features

- Offsite backup your files, Microsoft SQL Server 7.0 / 2000, Oracle 8i / 9i, Lotus Domino/Notes 5.0 or above, Microsoft Exchanger Server 2000 / 2003 (support both full / incremental backup), MySQL 3.23.42 or above
- Easy to use web interface
- Customizable backup schedule allows backup to be scheduled at any time
- Compress and encrypt data automatically before sending them to the server (server stores only encrypted data)
- Increment backup strategy ensures that only new or updated files are sent to backup server
- Access backup data anytime, anywhere by using a browser
- Comprehensive backup report lists all files backed up. Backup report will be delivered to user automatically via email when each backup job completed.
- Backup data are CRC validated before they are stored on server.
- Customizable data retention policy allows user to access files even when they have been deleted.
- Select files to be backed up easily by using backup filter, e.g. selecting all *.doc and *.xls in your computer in a single operation
- Run any custom OS commands before/after a backup job.
- Run on Windows, MAC OS X, Netware, Linux, Sun Solaris and all other platforms supporting a Jave2 Runtime Environment 1.3.1.
- LiveUpdate allows patches to be deployed to hundreds of clients easily

1.3 Security

- Point-to-point SSL communication between server and client
- Support HTTP/HTTPS Proxy and Socks v4/v5 firewall
- Data are 128-bit encrypted when stored on backup server
- Choice of different encryption algorithms, e.g. Twofish, Triple DES, Advanced Encryption Standard (AES)
- Choice of different encryption modes, e.g. Electronic Cook Book (ECB) and Cipher Block Chaining (CBC)
- An random initializing vector, salt and iteration count will be generated by the software automatically for each file when encrypting your data
- Each backup user can restrict online access to his files to his pre-defined list of IP addresses

1.4 System Requirement

- OS: Windows 95/98/ME/NT/2000/XP/2003, Redhat Linux 6.x or above *, Solaris 2.x/7.x/8.x/9.x, Mac OS X, NetWare 5.1 or above, and all other platforms supporting Java2 Runtime 1.3.1.
- Memory: 128MB
- Disk Space: 30MB
- Network Protocol: TCP/IP (http/https)

* Standard C++ libraries for backwards compatibility compiler (compat-libstdc++-x.x-y.y.y.y.i386.rpm) must be installed if you are not using a Linux 2.2 kernel. These libraries are required to run all Java applications.

2 Installation

Before you can start backing up data to Ahsay Offsite Backup Server, you need to install Ahsay Online Backup Manager onto your computer.

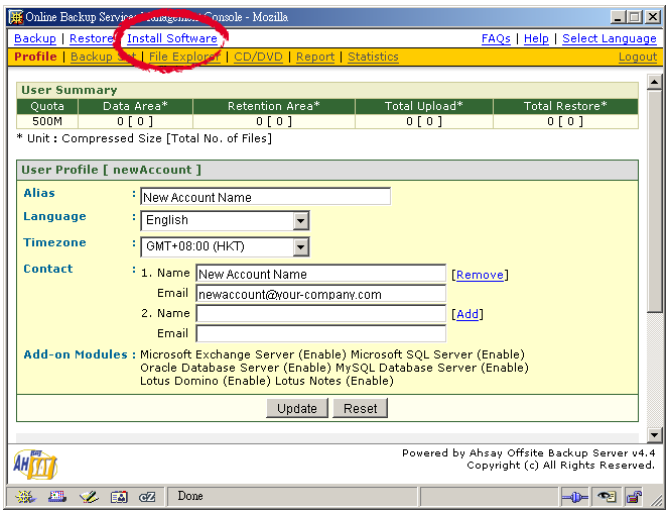
IMPORTANT: You should not install and run Ahsay Online Backup Manager on more than one computer using a single backup account. As a rule of thumb, for each computer you want to install and run Ahsay Online Backup Manager, you need to have an individual backup account.

2.1 Installing Ahsay Online Backup Manager

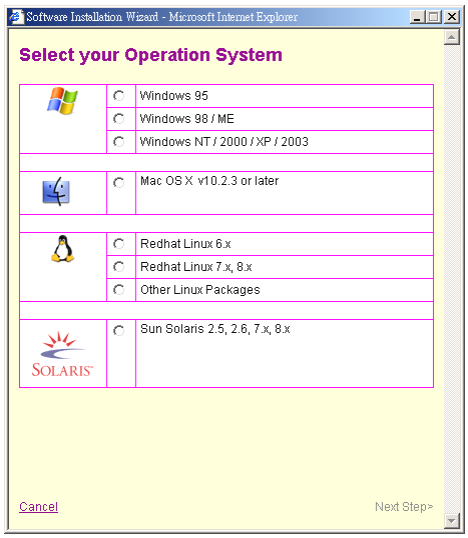
Please follow the instructions below to install Ahsay Online Backup Manager onto your computer.

i. Logon to website

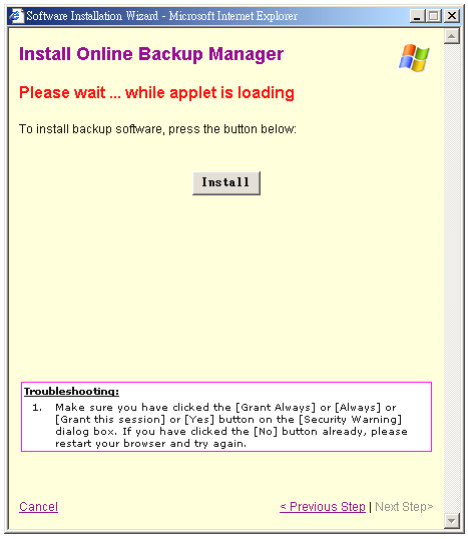
ii. Click [Install Software] link available at the top of the page



iii. Select your operating system

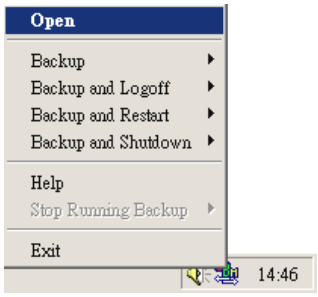


iv. Press the [Install] button, if you are using Windows / Mac



v. Follow the instruction on the installation wizard to complete installation

vi. An Ahsay Online Backup Manager icon is now installed in the system tray (next to your system clock). To open Ahsay Online Backup Manager, just right the icon and choose [Open].



2.2 Installing Ahsay Online Backup Manager on NetWare

Please follow the instructions below to install Ahsay Online Backup Manager on Netware.

System Requirements

i. NetWare 5.1 or above with Novell NetWare JVM 1.3.1 or above installed

How to install Ahsay Online Backup Manager on NetWare?

i. Download Ahsay Online Backup Manager from http://YOUR-SERVER/obs/jsp/applet/obi/obm-netware.zip (or from http://www.ahsay.com/obs/jsp/applet/obi/obm-netware.zip)

ii. Expand the zip file to "SYS:\". A "SYS:\AhsayOBM" directory should now be created.

iii. Under the NetWare console, run "SYS:\AhsayOBM\bin\BackupManager.ncf"

iv. Enter the username, password of your backup account

v. Click the [Options] button and enter the hostname of your backup server

vi. Once logged on, configure your backup set and close Ahsay Online Backup Manager

vii. (Optional) You can start online backup scheduler by running "SYS:\AhsayOBM\bin\Scheduler.ncf" under the NetWare console

2.3 Trouble Shooting

i What can I do if the [install] button does not show up on the installation page?

A Java Virtual Machine (JVM) is required to run the installer. For Windows XP or Windows 2003, the Microsoft JVM is not bundled with the Operating System. This is the reason why the [Install] button does not show up on the installation page. If this problem applies to you, please download and install the Sun Java2 Runtime Environment (JRE) from http://java.sun.com/ and try installing the software again.

3 Quick Start

For those of you who would like to get started quickly, this chapter will give you all information required to start backing up your data using Ahsay Online Backup Manager. Before you read on, please make sure you have installed Ahsay Online Backup Manager to your computer by following the instructions outlined in the previous chapter.

3.1 Quick Start - File Backup

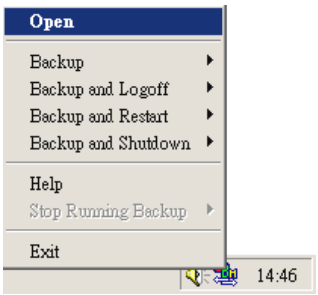
This section will give you the information on how you can backup your document files to Ahsay Offsite Backup Server.

How to backup files?

Please follow the instructions below to backup your data to an Ahsay Offsite Backup Server.

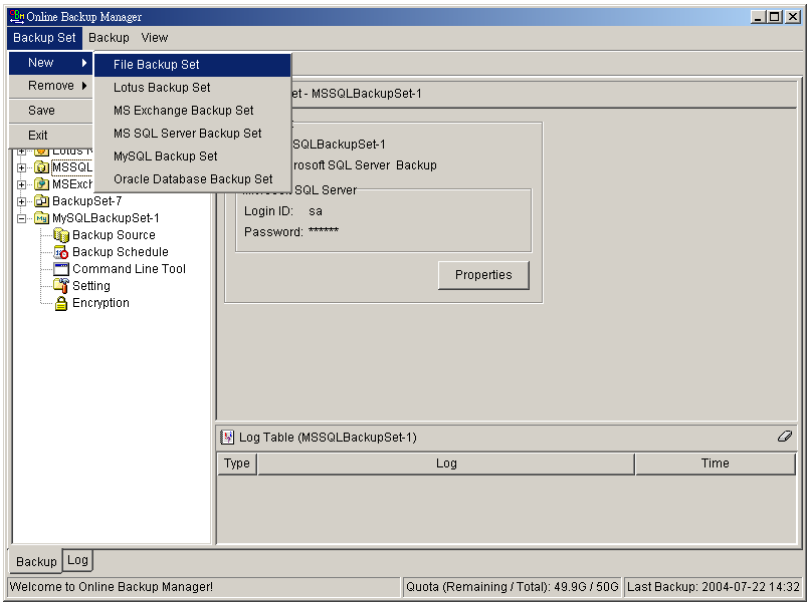
i. Open Ahsay Online Backup Manager

ii. Right click Ahsay Online Backup Manager icon available in the system tray and choose [Open]

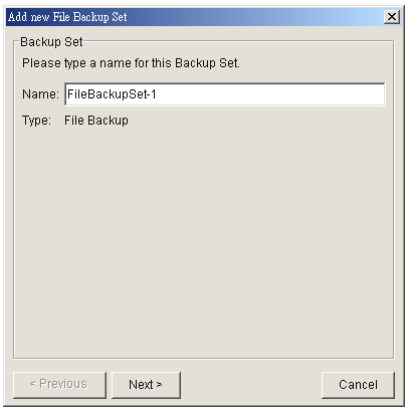


iii. Create a backup set

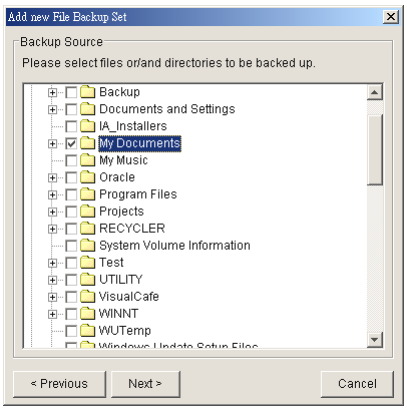
a. From the Menu, Choose [Backup Set] -> [New] -> [File Backup Set]



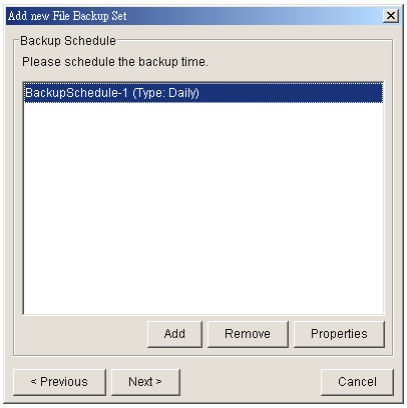
b. Enter a name for your backup set



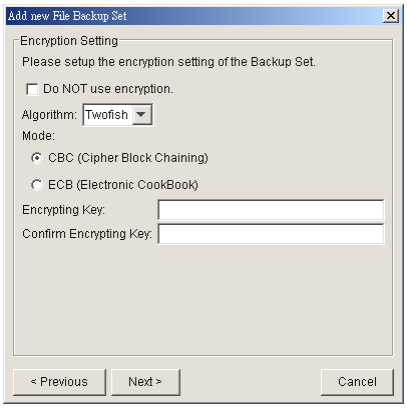
c. Select the files/directories you want to backup



d. Set the backup schedule (Note: You can have more than one schedule in a backup set)



e. Set the encryption algorithm, encryption mode and encrypting key for this backup set

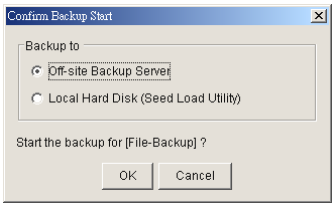


(Hint: For maximum security, please select AES (Advanced Encryption Standard) Algorithm, CBC (Cipher Block Chaining) mode and use an encrypting key with more than 8 characters.)

iv. Run Backup

a. Select the backup set you want to run on the left panel and press the [Start Backup] button (►) available at the toolbar

b. Select [Off-site Backup Server] to start backing up your files to an Ahsay Offsite Backup Server.



Note:
1. You can have more than one backup set in backup account.
2. Please write the encrypting key down on paper and keep it in a safe place. If you lost your encrypti ng key is lost, you will not be able to restore your backup files.

3.2 Quick Start - Microsoft SQL Server Backup

This section will give you the information on how you can backup a Microsoft SQL Server 7.0 / 2000 database to Ahsay Offsite Backup Server using Ahsay Online Backup Manager.

Requirements

i. Ahsay Online Backup Manager must be installed onto the computer running Microsoft SQL Server.

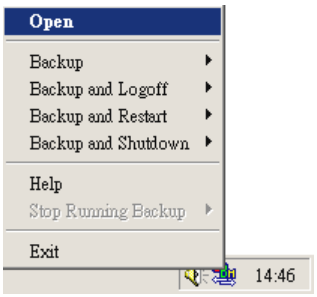
ii. Data from Microsoft SQL Server will be backed up to a temporary directory before they are sent to Ahsay Offsite Backup Server. Please make sure you have sufficient space on your computer to store these data when you run the backup job.

How to backup Microsoft SQL Server 7.0 / 2000 databases?

Please follow the instructions below to backup your Microsoft SQL Server databases to an Ahsay Offsite Backup Server.

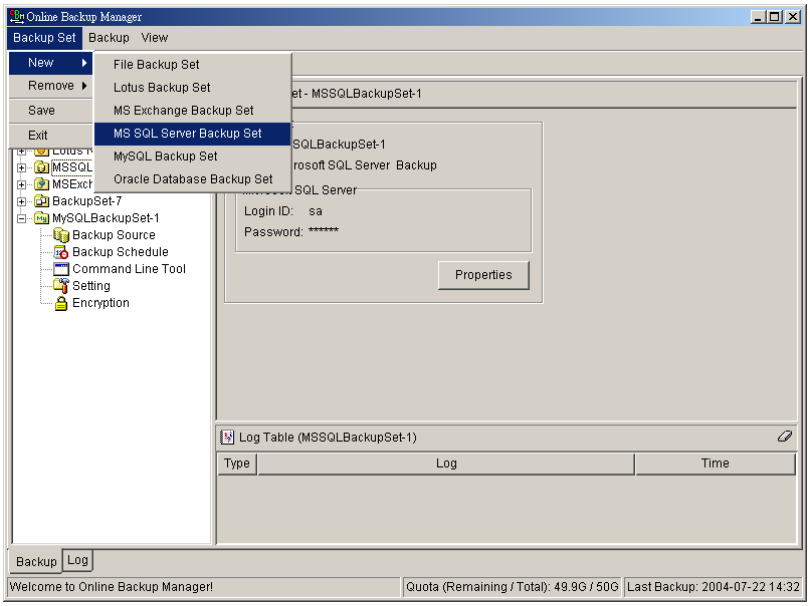
i. Open Ahsay Online Backup Manager

Right click Ahsay Online Backup Manager icon available in the system tray and choose [Open]

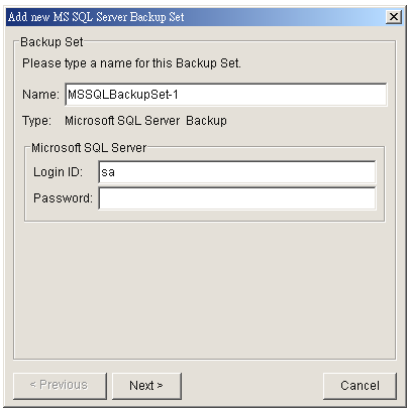


ii. Create a backup set

a. From the Menu, Choose [Backup Set] -> [New] -> [MS SQL Server Backup Set]

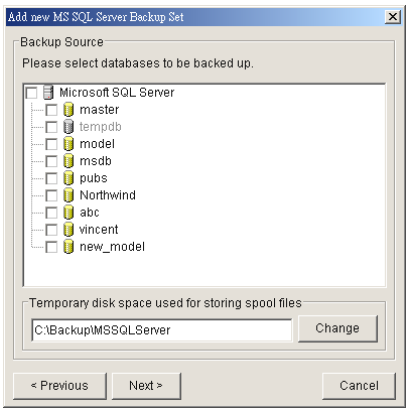


b. Enter a name for your backup set



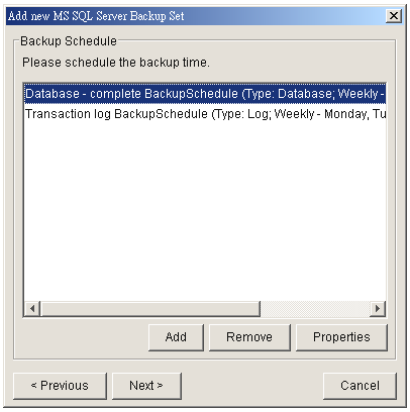
c. Enter the Microsoft SQL Server administrator username and password

d. Select the database(s) you want to backup



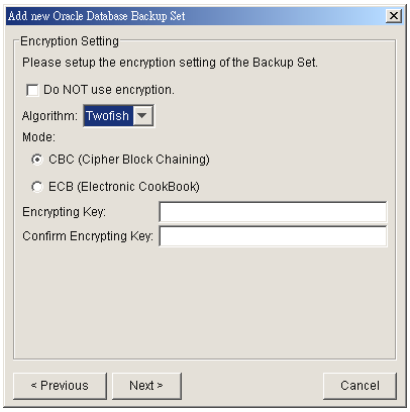
e. Enter a temporary location to store the backup files before they are sent to an Ahsay Offsite Backup Server

f. Set the backup schedule for full database backup and transaction log backup



(Note: You can have more than one schedule in a backup set, i.e. you can perform intra-day transaction log backup by adding more than one daily transaction log backup schedule to your backup set)

g. Set the encryption algorithm, encryption mode and encrypting key for this backup set

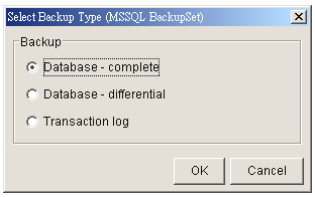


(Hint: For maximum security, please select AES (Advanced Encryption Standard) Algorithm, CBC (Cipher Block Chaining) mode and use an encrypting key with more than 8 characters.)

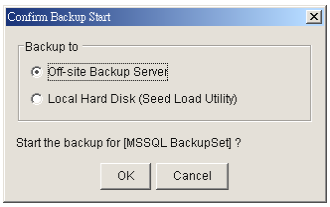
iii. Run Backup

a. Select the backup set you want to run on the left panel and press the [Start Backup] button (►)

b. Select the backup type (e.g. Complete, Differential, Transaction Log) you would like to perform



c. Select [Off-site Backup Server] to start backing up your files to an Ahsay Offsite Backup Server.



3.3 Quick Start - Oracle 8i/9i Backup

This chapter will give you the information on how you can backup an Oracle 8i/9i database to Ahsay Offsite Backup Server using Ahsay Online Backup Manager.

Requirements

i. Ahsay Online Backup Manager must be installed onto the computer that can connect to your Oracle 8i/9i server using TCP/IP protocol.

ii. Data from Oracle 8i/9i database will be backed up to a temporary directory before they are sent to Ahsay Offsite Backup Server. Please make sure you have sufficient space on your computer to store these data when you run the backup job.

iii. Database must be in archived log mode

iv. Oracle JVM must be enabled

v. JAVASYSPRIV role must be granted to system account

Please refer to "Chapter 6 – Backup/Restore Oracle 8i/9i" for more information on these requirements.

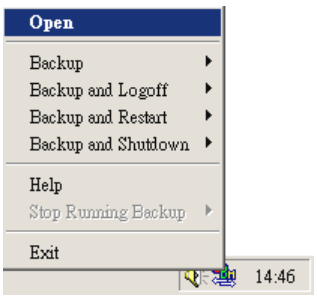
How to backup Oracle 8i/9i database?

Please follow the instructions below to backup your Oracle database to the Ahsay Offsite Backup Server.

i. Install Ahsay Online Backup Manager onto your computer

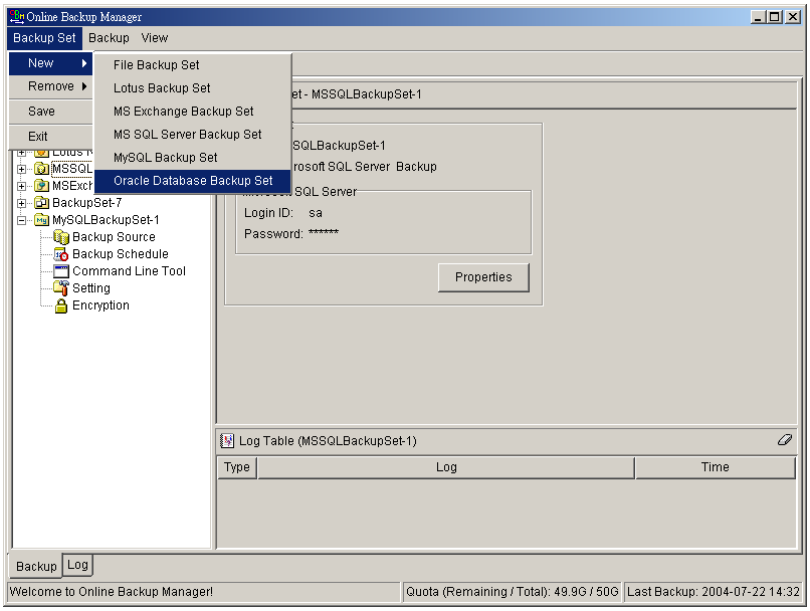
ii. Open Ahsay Online Backup Manager

Right click Ahsay Online Backup Manager icon available in the system tray and choose [Open]

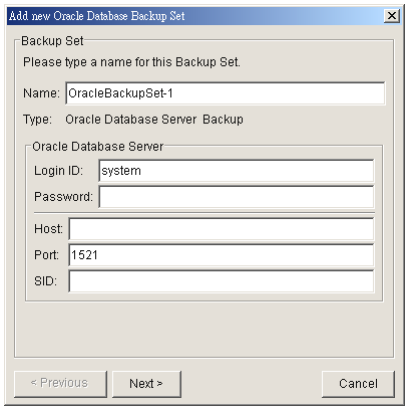


iii. Create a backup set

a. From the Menu, Choose [Backup Set] -> [New] -> [Oracle Database Backup Set]

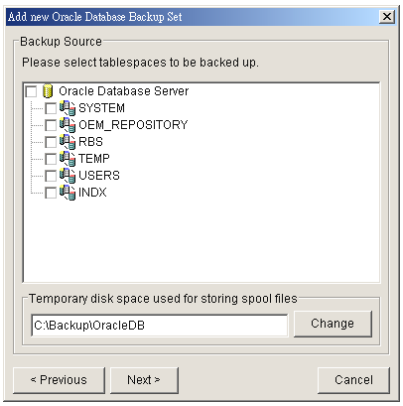


b. Enter a name for your backup set



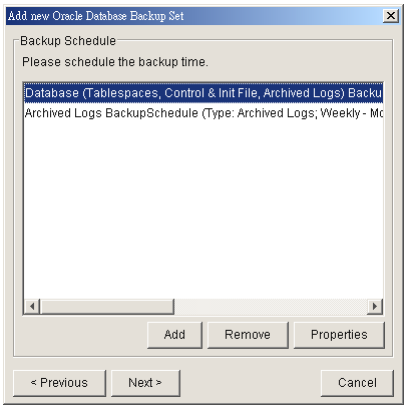
c. Enter the system password, the Oracle Database Server Host Name, TNS Port and SID

d. Select the tablespace(s) you want to backup



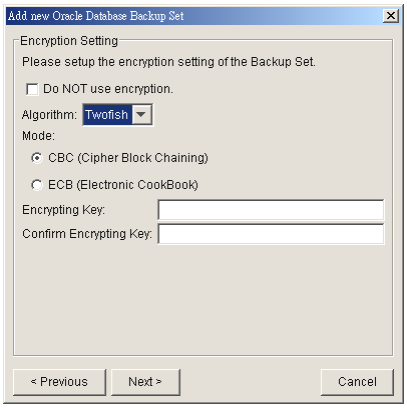
e. Enter a temporary location to store the database file(s) before they are sent to an Ahsay Offsite Backup Server

f. Set the backup schedule for database backup and archived log backup



Note: You can have more than one schedule in a backup set, i.e. you can perform intra-day transaction log backup by adding more than one daily transaction log backup schedule to your backup set.

g. Set the encryption algorithm, encryption mode and encrypting key for this backup set

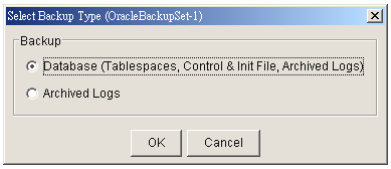


Hint: For maximum security, please select AES (Advanced Encryption Standard) Algorithm, CBC (Cipher Block Chaining) mode and use an encrypting key with more than 8 characters.

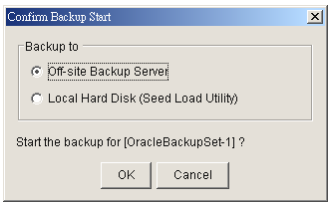
iv. Run Backup

a. Select the backup set you want to run on the left panel and press the [Start Backup] button (►)

b. Select the backup type (e.g. Database Backup, Archived Log Backup) you would like to perform



c. Select [Off-site Backup Server] to start backing up your files to an Ahsay Offsite Backup Server.



3.4 Quick Start – Lotus Domino/Notes Backup

This chapter will give you the information on how you can backup Lotus Domino/Notes databases to Ahsay Offsite Backup Server using Ahsay Online Backup Manager.

Requirements

i. Ahsay Online Backup Manager must be installed onto the computer running Lotus Domino server / Notes client.

ii. Data from Lotus Domino server / Notes client will be backed up to a temporary directory before they are sent to Ahsay Offsite Backup Server. Please make sure you have sufficient space on your computer to store these data when you run the backup job.

iii. Lotus Domino server must runs with archive transaction logging enabled

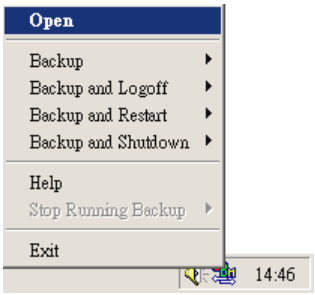
Please refer to "Chapter 8 – Backup/Restore Lotus Domino/Notes" for more information on these requirements.

How to backup Lotus Domino / Notes?

Please follow the instructions below to backup your Lotus Domino/Notes databases to the Ahsay Offsite Backup Server.

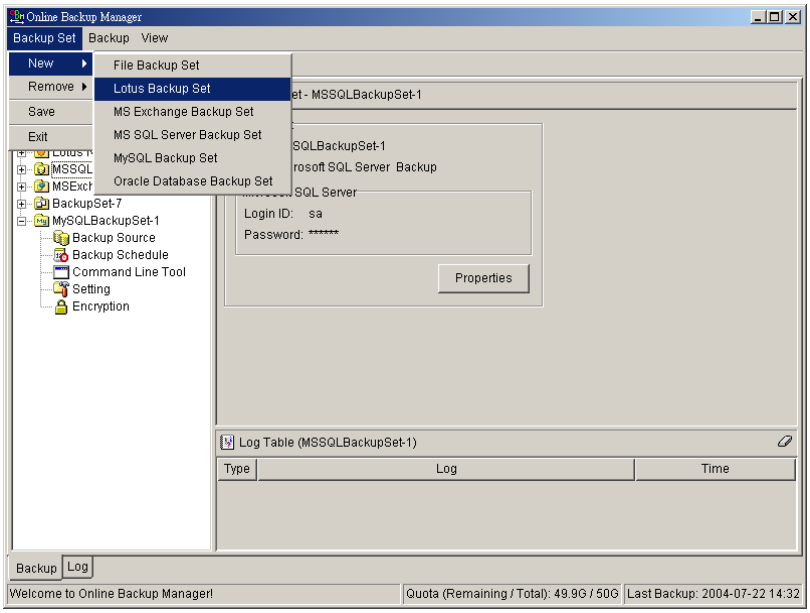
i. Open Ahsay Online Backup Manager

Right click Ahsay Online Backup Manager icon available in the system tray and choose [Open]

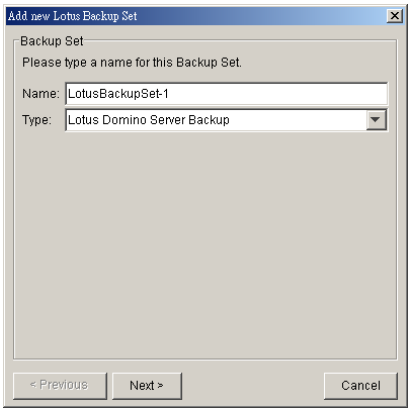


ii. Create a backup set

a. From the Menu, Choose [Backup Set] -> [New] -> [Lotus Backup Set]

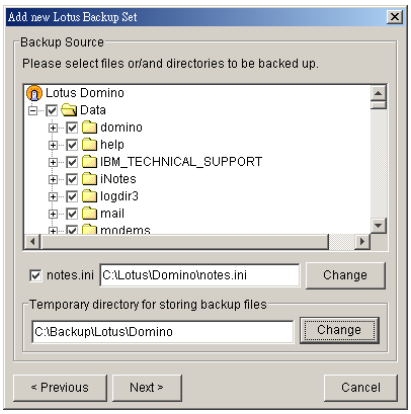


b. Enter a name for your backup set



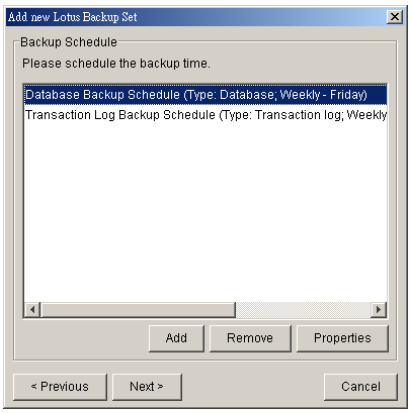
c. Select the Backup Set Type (Lotus Domino Server Backup / Lotus Notes Client Backup)

d. Select the database(s) / file(s) you want to backup



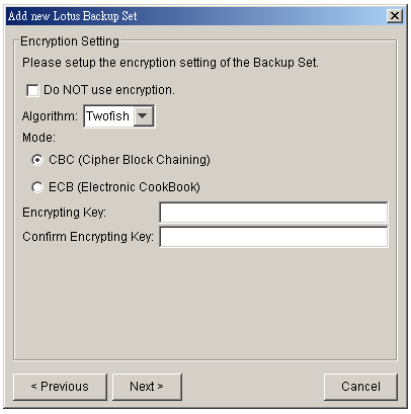
e. Enter a temporary location to store the backup files before they are sent to an Ahsay Offsite Backup Server

f. Set the backup schedule for Database Backup



g. Set the backup schedule for Transaction Log Backup (for Domino server only) (Note: You can have more than one schedule in a backup set, i.e. you can perform intra-day transaction log backup by adding more than one daily transaction log backup schedule to your backup set)

h. Set the encryption algorithm, encryption mode and encrypting key for this backup set

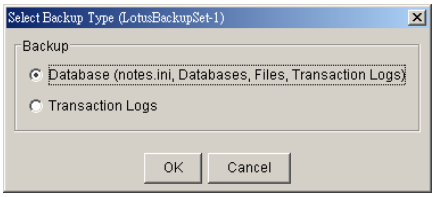


(Hint: For maximum security, please select AES (Advanced Encryption Standard) Algorithm, CBC (Cipher Block Chaining) mode and use an encrypting key with more than 8 characters.)

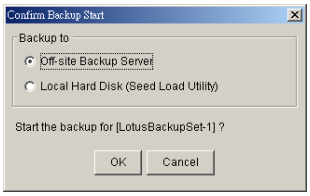
iii. Run Backup

a. Select the backup set you want to run on the left panel and press the [Start Backup] button (►)

b. Select the backup type (e.g. Database, Transaction Log) you would like to perform (for Domino server only)



c. Select [Off-site Backup Server] to start backing up your files to an Ahsay Offsite Backup Server.



3.5 Quick Start – Microsoft Exchange Server Backup

This chapter will give you the information on how you can backup a Microsoft Exchange Server to Ahsay Offsite Backup Server using Ahsay Online Backup Manager.

Requirements

i. Microsoft Exchange Server 2000 with Services Pack 3 and post-SP3 update rollup installed. Please refer to http://www.microsoft.com/exchange/ for more information.
or
Microsoft Exchange Server 2003.

ii. Ahsay Online Backup Manager must be installed onto the computer running Microsoft Exchange Server 2000 / 2003.

iii. Data from Microsoft Exchange Server will be backed up to a temporary directory before they are sent to Ahsay Offsite Backup Server. Please make sure you have sufficient space on your computer to store these data when you run the backup job.

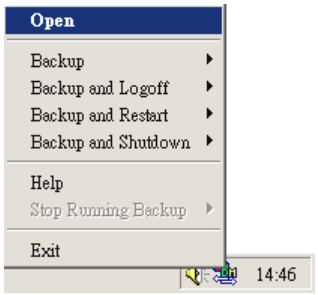
Please refer to "Chapter 9 – Backup/Restore Microsoft Exchange Server 2000 / 2003" for more information on these requirements.

How to backup a Microsoft Exchange Server ?

Please follow the instructions below to backup your Microsoft Exchange Server 2000 / 2003 using Ahsay Online Backup Manager:

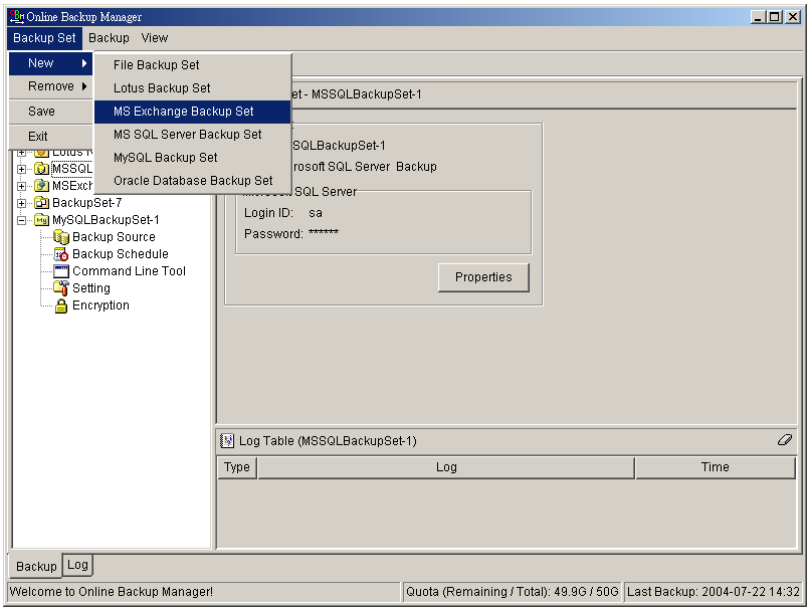
i. Open Ahsay Online Backup Manager

Right click Ahsay Online Backup Manager icon available in the system tray and choose [Open]

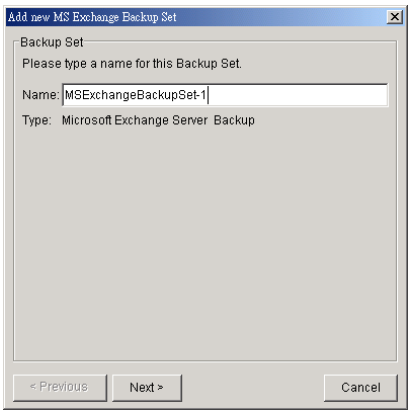


ii. From the Menu, Choose [Backup Set] -> [New] -> [MS Exchange Backup Set] Create a backup set

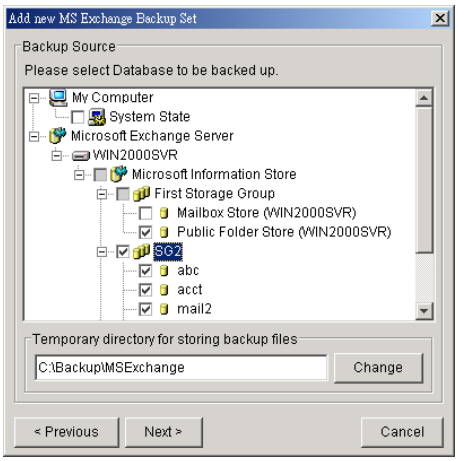
a. From the Menu, Choose [Backup Set] -> [New] -> [MS Exchange Backup Set]



b. Enter a name for your backup set



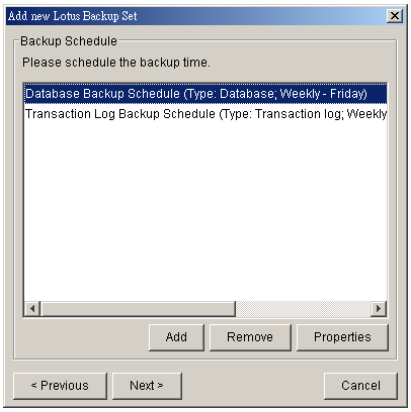
c. Select the database(s) to be backup



If this Exchange Server is also a domain controller of this Active Directory, select the [System State] checkbox as well. Otherwise, please install Ahsay Online Backup Manager to the domain controller of this Active Directory and select the [System State] checkbox on that computer

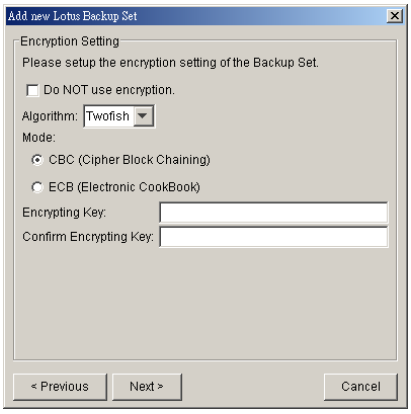
d. Enter a temporary directory for storing the backup files before they are sent to an Ahsay Offsite Backup Server

e. Set the backup schedule for Database Backup



f. Set the backup schedule for Transaction Log Backup (for Domino server only) (Note: You can have more than one schedule in a backup set, i.e. you can perform intra-day transaction log backup by adding more than one daily transaction log backup schedule to your backup set)

g. Set the encryption algorithm, encryption mode and encrypting key for this backup set

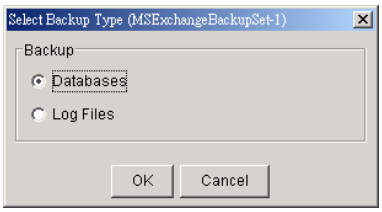


(Hint: For maximum security, please select AES (Advanced Encryption Standard) Algorithm, CBC (Cipher Block Chaining) mode and use an encrypting key with more than 8 characters.)

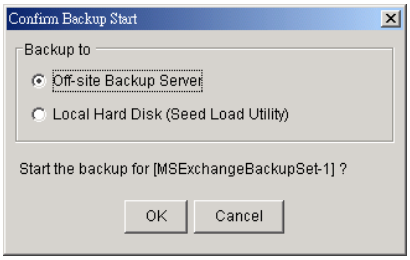
iii. Run Backup

a. Select the backup set you want to run on the left panel and press the [Start Backup] button (►)

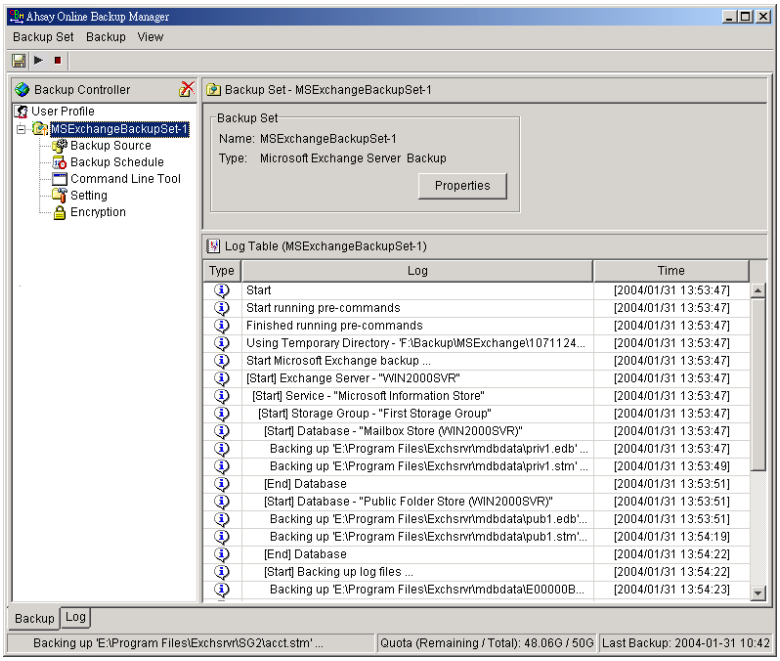
b. Select the backup type (e.g. Database, Log Files) you would like to perform



c. Select [Off-site Backup Server] to start backing up your files to an Ahsay Offsite Backup Server and press the [OK] button



d. You should get something similar to the screen shot below.



3.6 Quick Start – MySQL Backup

This chapter will give you the information on how you can backup a MySQL server to Ahsay Offsite Backup Server using Ahsay Online Backup Manager.

Requirements

i. Ahsay Online Backup Manager must be installed onto the computer running MySQL server.

ii. Data from MySQL server will be backed up to a temporary directory before they are sent to Ahsay Offsite Backup Server. Please make sure you have sufficient space on your computer to store these data when you run the backup job.

iii. There must be a MySQL account can be used to connect from localhost.

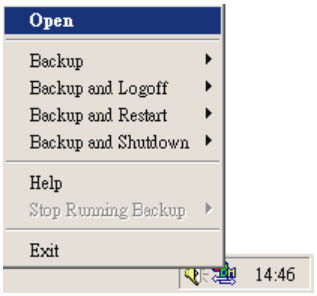
Please refer to "Chapter 10 – Backup/Restore MySQL Server" for more information on these requirements.

How to backup a MySQL server ?

Please follow the instructions below to backup your MySQL databases using Ahsay Online Backup Manager:

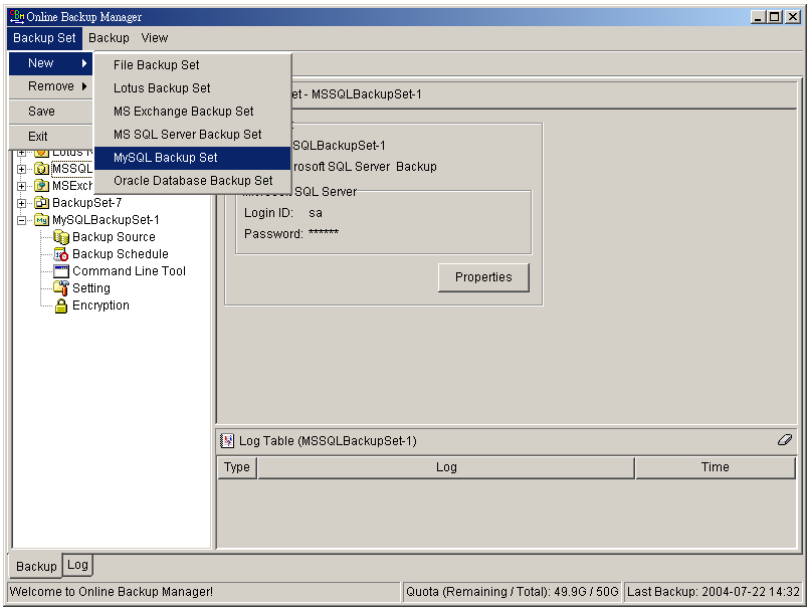
i. Open Ahsay Online Backup Manager

Right click Ahsay Online Backup Manager icon available in the system tray and choose [Open]

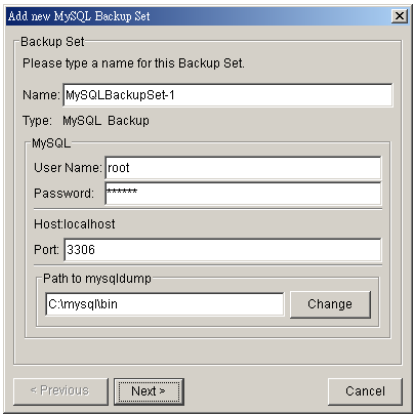


ii. From the Menu, Choose [Backup Set] -> [New] -> [MySQL Backup Set] Create a backup set

a. From the Menu, Choose [Backup Set] -> [New] -> [MySQL Backup Set]

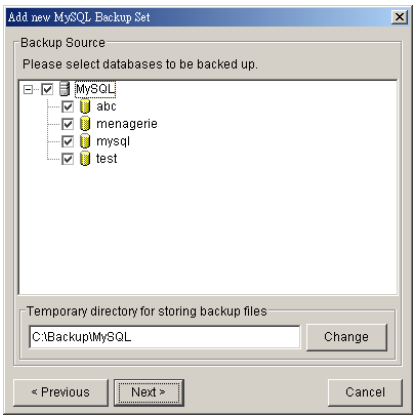


b. Enter a name for your backup set



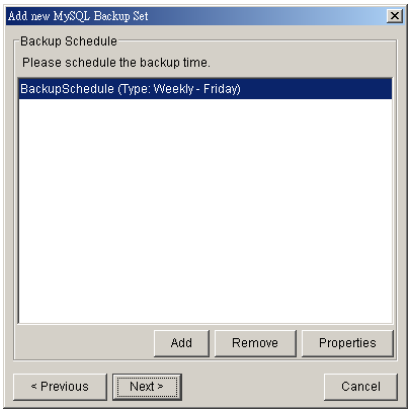
c. Enter the root password, the MySQL server TCP/IP port number and the path to MySQL backup utility (mysqldump)

d. Select the database(s) to be backup

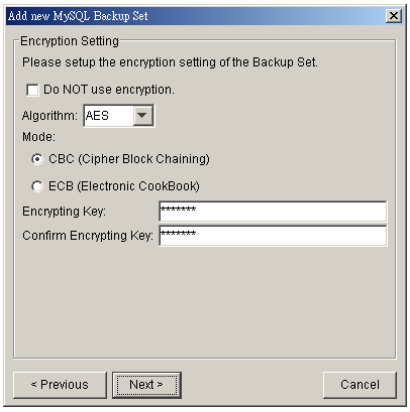


e. Enter a temporary directory for storing the backup files before they are sent to an Ahsay Offsite Backup Server

f. Set the backup schedule for Database Backup



g. Set the encryption algorithm, encryption mode and encrypting key for this backup set

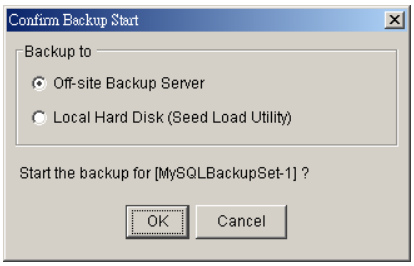


(Hint: For maximum security, please select AES (Advanced Encryption Standard) Algorithm, CBC (Cipher Block Chaining) mode and use an encrypting key with more than 8 characters.)

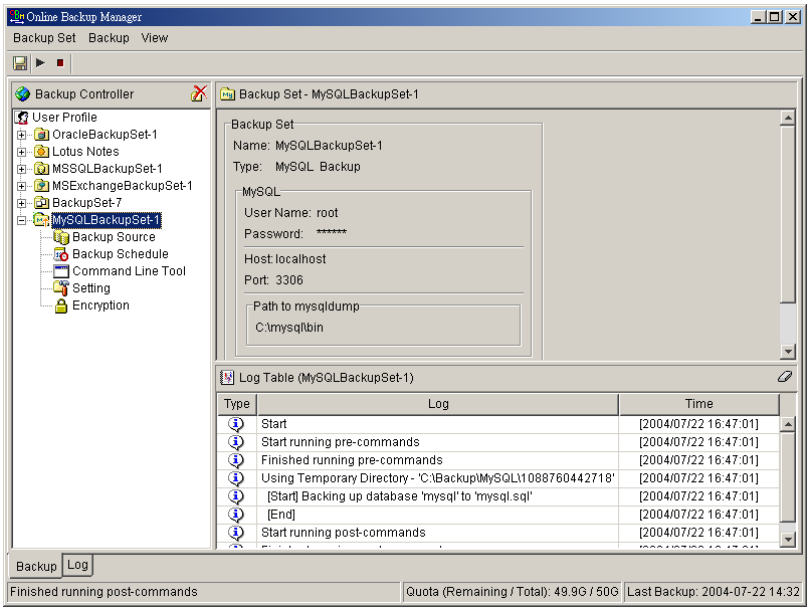
iii. Run Backup

a. Select the backup set you want to run on the left panel and press the [Start Backup] button (►)

b. Select [Off-site Backup Server] to start backing up your files to an Ahsay Offsite Backup Server and press the [OK] button



c. You should get something similar to the screen shot below.

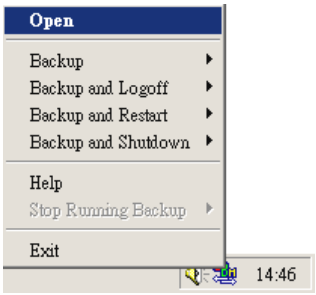


4 Using Ahsay Online Backup Manager

This chapter will describe all features available in Ahsay Online Backup Manager and outline how you can use the features of Ahsay Online Backup Manager to meet various backup needs.

4.1 System Tray Launcher

When you have successfully installed Ahsay Online Backup Manager to your computer, an Ahsay Online Backup Manager icon will be added to the system tray area (next to your system clock) automatically.

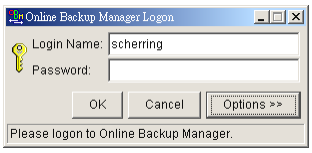


This icon is the entry point to Ahsay Online Backup Manager. Right clicking the icon will show a menu that provides the following functions:

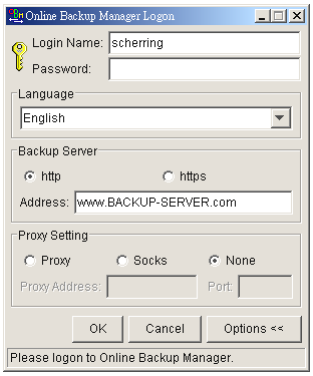
Menu Item	What it does
Open	Run Ahsay Online Backup Manager
Backup	Run the backup set (or all backup sets) chosen in the sub-menu in background
Backup and Logoff	Run the backup set (or all backup sets) chosen in the sub-menu in background and logoff from Windows
Backup and Restart	Run the backup set (or all backup sets) chosen in the sub-menu in background and restart Windows
Backup and Shutdown	Run the backup set (or all backup sets) chosen in the sub-menu in background and shutdown this computer
Help	Show a help dialog
Stop running backup	Interrupt the running backup set (or all backup sets) chosen in the sub-menu
Exit	Close this system tray launcher application

4.2 Logon Dialog

Before you can use Ahsay Online Backup Manager, you have to be authenticated by the Ahsay Offsite Backup Server first. The logon dialog shown below will check if you have the right to access Ahsay Online Backup Manager by submitting the username and password you provided to the backup server.



Pressing [Options] button shows the extended features available.



You can switch the language of the user interface by choosing the desired language available in the language drop down list. The languages available include English, French, Traditional Chinese and Simplified Chinese.

For secure communication, you can choose to communicate with Ahsay Offsite Backup Server in SSL (Secure Socket Layer) by selecting the [https] option.

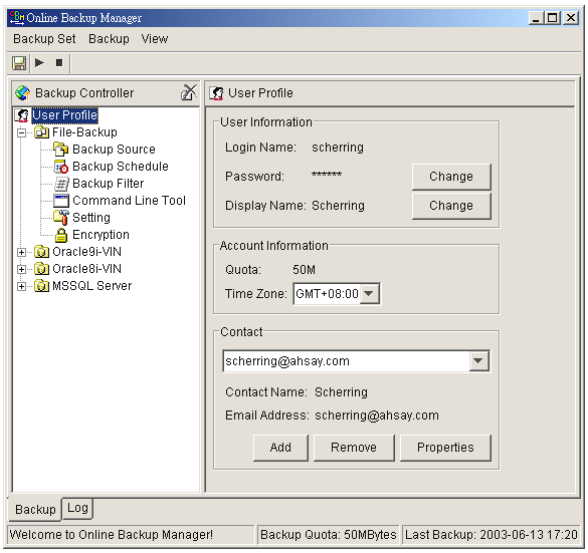
The [Address] field shows the Ahsay Offsite Backup Server to which Ahsay Online Backup Manager will connect to authenticate your username and password. You can use either a resolvable host name (e.g. backup.your-domain.com) or an IP address (e.g. 192.168.1.1).

If the Ahsay Offsite Backup Server is not accepting connection from the standard ports (Port 80 and 443 for http and https respectively), you can append a semi-colon ":" and your custom port number to the host name of the [Address] field (e.g. backup.your-domain.com:8080) to connect to the server using the custom port number.

If you need to connect to the server through proxy, just enter your proxy setting in the [Proxy Setting] section. For [SOCKS] proxy, both v4 and v5 without user authentication are supported.

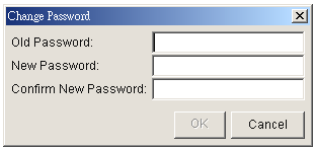
4.3 User Profile

After the backup server authenticates you successfully, Ahsay Online Backup Manager main window appears. You can then use Ahsay Online Backup Manager to update your user profile.

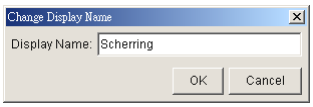


You can perform the following update to your user profile.

To change your [Password], press the [Change] button next to the password field. A Change Password dialog will appear. Enter your original password and new password into the text field of this dialog and press [OK].

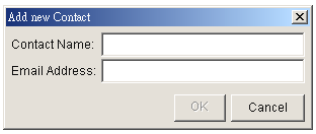


To change your [Display Name], press the [Change] button next to the display name field. A Change Display Name dialog will appear. Enter the new display name and press [OK].



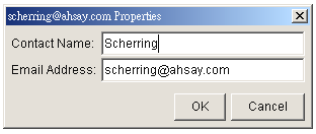
To change your [Time Zone], just select your time zone from the drop down list next to the time zone entry.

To add a new contact email to this account, press the [Add] button in the [Contact] section. A [Add New Contact] dialog will appear. Enter a name and an email address in the text field provided and then press the [OK] button.



To remove a contact email, select the email that is to be removed from the email list and press the [Remove] button. Press [OK] to confirm the removal.

To update a contact email, select the email that is to be updated from the email list and press the [Properties] button. A [Update Contact Property] dialog will appear. After you have made the changes that you want, press the [OK] button.



4.4 Backup Set

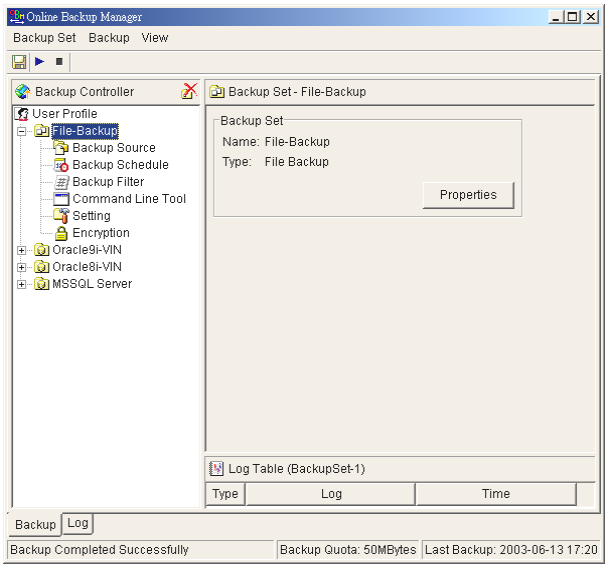
A backup set contains all backup settings of a backup operation. This section will describe all features available within a backup set and explain how you can use each of them to achieve various tasks.

Each backup account can have multiple backup sets. Each backup set is an individual and independent entity. For example, if you want one directory to be backed up during the day and another directory to be backed up during the night, you can create two backup sets, each with a different backup schedule and backup source, to serve this need.

Backup Set Type

A backup set can only be of one of the following types:

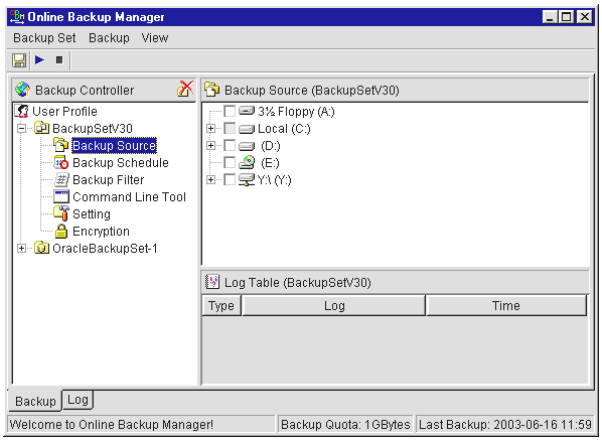
Backup Type	Description
File	Enable files backup
Microsoft SQL Server	Enable Microsoft SQL Server 7.0/2000 backup
Oracle Database Server	Enable Oracle 8i/9i Database backup
Lotus Domino/Notes	Enable Lotus Domino/Notes backup
Microsoft Exchange Server	Enable Microsoft Exchange Server 2000 / 2003 backup



Backup set type is defined at backup set creation and cannot be modified. If you want to change the backup set type, you have to create another backup set.

Backup Source

A backup source defines the files/directories that are to be included in a backup set. There are two types of backup source: Selected and Deselected. Selected backup source defines files/directories that are to be included in a backup set while deselected backup source defines files/directories that are to be excluded from a backup set. Online Backup Manager will generate appropriate backup source setting for you automatically when you make your backup source selection on Ahsay Online Backup Manager.

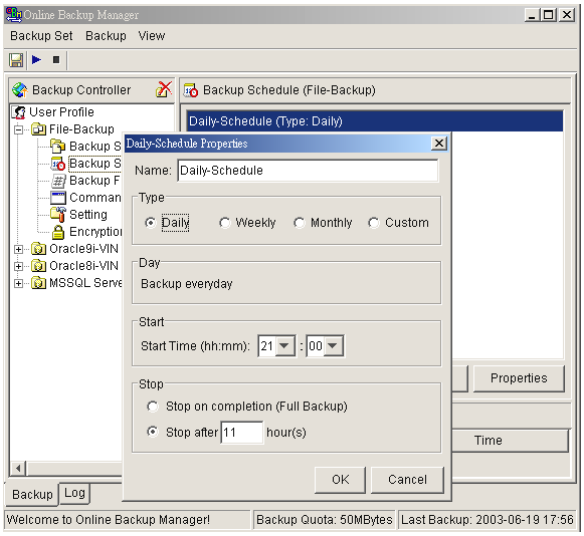


The checkbox next to the files/directories shown above can be in one of the following mode:

Mode	Description
☑	All files/directories (recursively) under this directory will be backed up
☑	All files/directories (recursively), except those explicitly excluded, under this directory will be backed up. If you add files/directories to this directory in the future, they will be backed up as well.
☐	Only the checked files/directories under this directory will be backed up. If you add files/directories to this directory in the future, they will NOT be backed up.
☐	Nothing under this directory will be backed up.

Backup Schedule

A backup schedule defines the frequency and the time backup will run automatically.



Backup schedule can be in one of the following types:

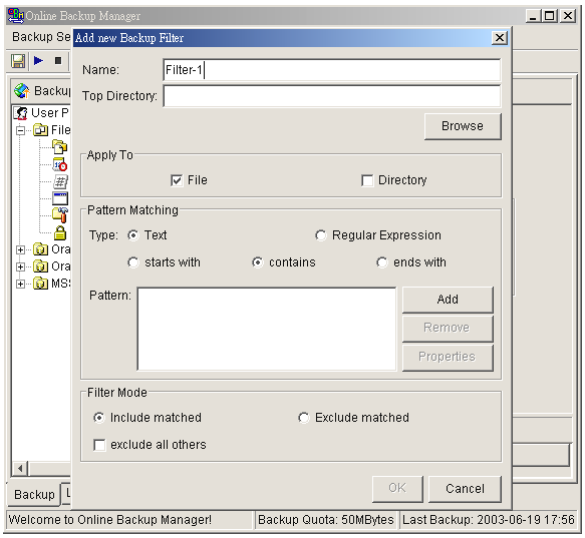
Type	Description
Daily	Backup jobs will run everyday
Weekly	Backup jobs will run on the specified day(s) of every week
Monthly	Backup jobs will run on the specified day or on a day with a given criteria (e.g. first weekend, last weekday) of every month
Custom	Backup job will run once on any particular date

For each type of schedule above, backup will run at scheduled time for a maximum of the duration specified (or until all data are backed up if [Stop on backup completion] option is chosen). If a backup job does not finish within the maximum duration specified, it will be interrupted.

Please note that you can have more than one schedule within a backup set.

Backup Filter

A backup filter defines the file selection rules that allow user to easily include/exclude files into/from the backup set by applying user defined criteria(s) to the file names or directory names.



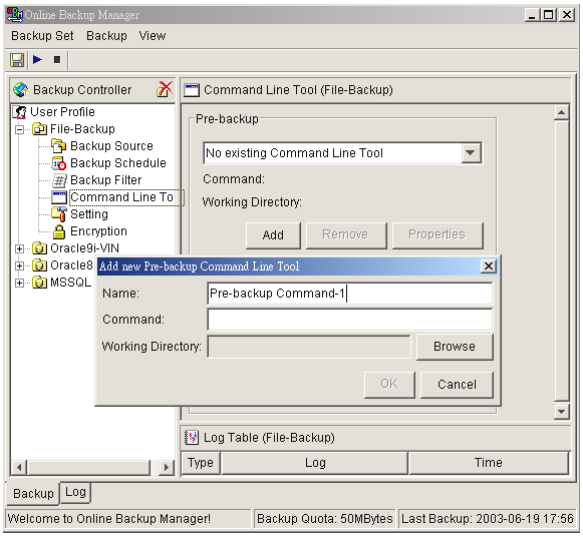
Key	Description
Name	The name of a filter
Top Directory	The top directory to which this filter is applied. Filtering rules will be applied to all files and/or directories under this directory.
Apply To	Define whether to apply the filtering rule to files and/or directories
Pattern Matching	It defines the filtering rules of a filter. A filtering rule can be of one of the following types: [Start With] Include/Exclude all files/directories with name starting with a certain pattern. For example: You can use B* to match all files with name starting with a 'B' character [Contain] Include/Exclude all files/directories with name containing a certain pattern. For example: You can use *B* to match all files with name containing with a 'B' character [End With] Include/Exclude all files/directories with name ending with a certain pattern. For example: You can use *.doc to match all files with name ending with '.doc' (all Word documents) [Regular Expression] Include/Exclude all files/directories with name matching a regular expression. For example: You can use ^B.*\.doc$ to match all files with name starting with a 'B' character and ending with '.doc'. Please consult references on regular expression for more information on how to use regular expression.

Filter Mode	Defines whether you want to include or exclude matched files into/from the backup set. Also, for those unmatched files, you can choose to exclude (if include filter type) or include (if exclude filter type) them into/from the backup set.

Example:
You can apply a "Exclude" filter of "End With" type with patterns *.exe and *.dll to the directory "C:\My Document\" to include all files, except the program executables (.exe) and dynamic link libraries (.dll), below "C:\My Document\" to a backup set.

Command Line Tool

The command line tool feature has two major components, the [Pre-Backup] command and the [Post-Backup] command. You can use the [Pre-Backup] or [Post-Backup] commands to run any native OS (operating system) commands before or after running a backup job.



Both [Pre-Backup] and [Post-Backup] commands comprise of the following parameters:

Key	Description
Name	Name of this Command
Command	The command to be run (e.g. C:\My Documents\Application.exe)
Working Directory	The directory at which this command will run

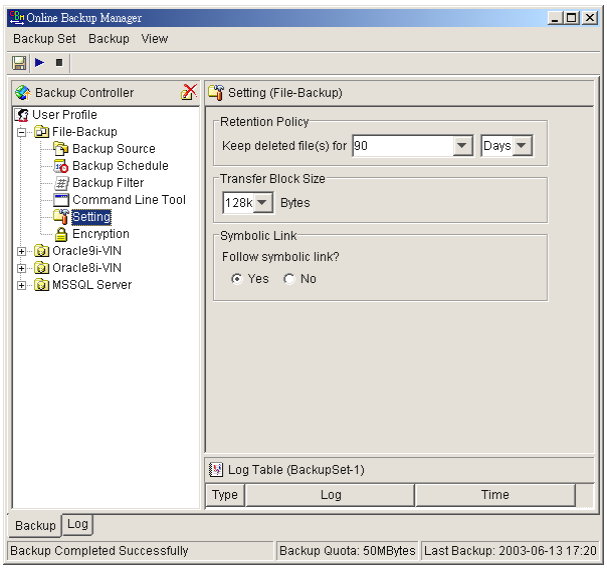
The backup set type affects the time at which [Pre-Backup] and [Post-Backup] commands run. The following table outlines when [Pre-Backup] and [Post-Backup] commands will run in different types of backup set.

Backup Set Type	When Pre-Backup Commands run?	When Post-Commands run?
File	Before uploading backup files	After uploading all backup files
Microsoft SQL Server	Before spooling backup files to temporary directory	After spooling backup files to temporary directory (i.e. before the first backup file is uploaded)
Oracle Database Server	Before spooling backup files to temporary directory	After spooling backup files to temporary directory (i.e. before the first backup file is uploaded)

Note: You should never backup an application while it is running as this can result in inconsistent and unusable files getting backed up. Please use the Pre-Backup Command feature to shutdown your application before running a backup job and use the Post-Backup Command feature to restart your application after the backup job has completed.

Setting

A backup set consists of some extra parameters that provide you access to various features of the backup operation within a backup set. They are listed in the following table:

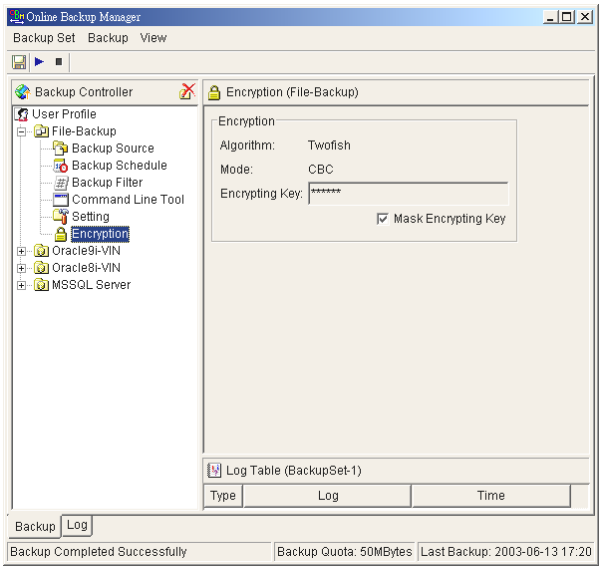


Parameter	Description
Retention Policy	During backup, if Ahsay Online Backup Manager finds out that you have deleted a file (or updated a file) on your computer, it will put the corresponding deleted (or updated) file already backed up on the backup server into a retention area. This setting defines how long files within the retention area will be kept on the backup server before they are deleted automatically from the server. You can choose to have retained files deleted automatically after a number of days or after a certain number of backup jobs.
Transfer Size	It defines the block size Ahsay Online Backup Manager will use to transfer your backup blocks. Generally, backup job using a larger block size would have a better performance, as there will be less roundtrip involved in connection initialization. However, some firewalls or proxy servers may block out-going network traffic (HTTP/HTTPS POST method) with large block size for security reasons. If you are in a network with this type of restriction, please lower the transfer size value and try again.
Follow Symbolic Link	Under Unix/Linux, users can use symbolic link to create a simple link to a directory from another directory. This setting defines whether you want Ahsay Online Backup Manager to traverse the symbolic links encountered on your backup path.

To change the above setting of your backup set, please select the [Setting] node on the left panel to invoke the setting panel on the right. After you have made your changes, please remember to press the [Save] button on the toolbar.

Encryption

Before your files are sent to Ahsay Offsite Backup Server, all your files are to be compressed and encrypted by your choice of encrypting algorithm, mode and key. The following table explains all encryption parameters available within a backup set.



Parameter	Description
Encryption Algorithm	It defines the encrypting algorithm used to encrypt your backup files. There are three encryption algorithms available: [AES] Advanced Encryption Standard algorithm [DESede] Triple DES algorithm [Twofish] Twofish algorithm We recommend the use of AES as it has been chosen as the encryption standard for commercial use. Please refer to references on Cryptography for more information on this area.
Encryption Mode	It defines the encrypting mode used to encrypt your backup files. There are two encryption modes available: [ECB] Electronic Cook Book Mode [CBC] Cipher Block Chaining Mode We recommend the use of CBC mode as it offers better security. Please refer to references on Cryptography for more information on this area.
Encrypting Key	The key used to encrypt all files within a backup set. **Please write it down on paper and keep it in a safe place. If the key is lost, you will not be able to recover your files from the encrypted backup files.**

Note:
Encryption settings are set at backup set creation time and cannot be modified. You need to

create a new backup set if you want to change your encryption settings for a backup set.

4.5 Backup Logs

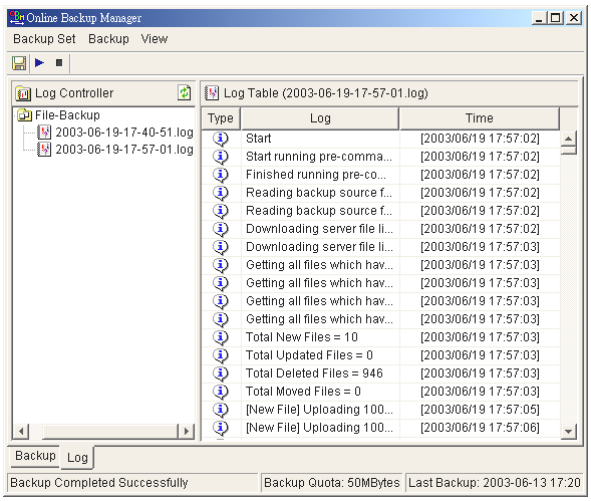
All backup activities are logged to backup activity log files. They are available for reviewing from Ahsay Online Backup Manager.

How to review backup activities?

You can review all your backup jobs by

i. Select the [Log] tab available at the bottom of Ahsay Online Backup Manager

ii. Select the Backup Job you want to review on the [Log Controller] panel

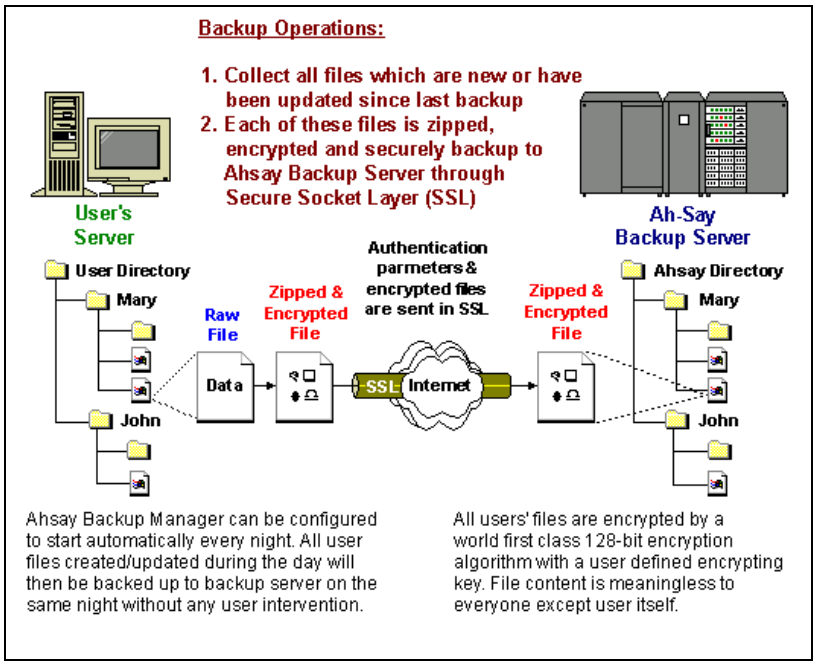


5 Backup/Restore Files

This chapter describes in details how Ahsay Online Backup Manager backup your files and how you can restore your backup files from Ahsay Offsite Backup Server using your favorite browser.

5.1 How files are backed up

The diagram below describes how Ahsay Online Backup Manager backup your files.



Run backup at scheduled time automatically

Once you set your backup scheduled, a backup job will be started automatically to perform backup operation for you at your absence. You can have backup running at your scheduled time as often as you want (e.g. twice a day or hourly during office hour) without requiring doing any extra work.

Incremental Backup

Unchanged files are already backed up to server and need not to be backed up again. Ahsay Online Backup Manager will pick the new or updated files from your backup set files and upload only these files to the server. It significantly reduces the time required to perform the backup operation since most users update less than 5% of their total data each day.

Compress and encrypt data automatically

Data are compressed and encrypted before they are uploaded to the server. Not only does it reduces the storage space to keep you backup files, it also ensures the privacy of your data.

File Retention Policy

The built-in file retention policy allows you to access multiple versions of the same file or even deleted files from your backup set. Backup files are put into a retention area before they are removed from the server. If you want to get back a deleted file (or you want to get back the previous versions of an updated files) within the retention period, these files will always be available in the retention area. This feature is particularly useful when you have accidentally deleted a file or incorrectly updated a file within the file retention period (file retention period is user customizable).

5.2 How to backup files

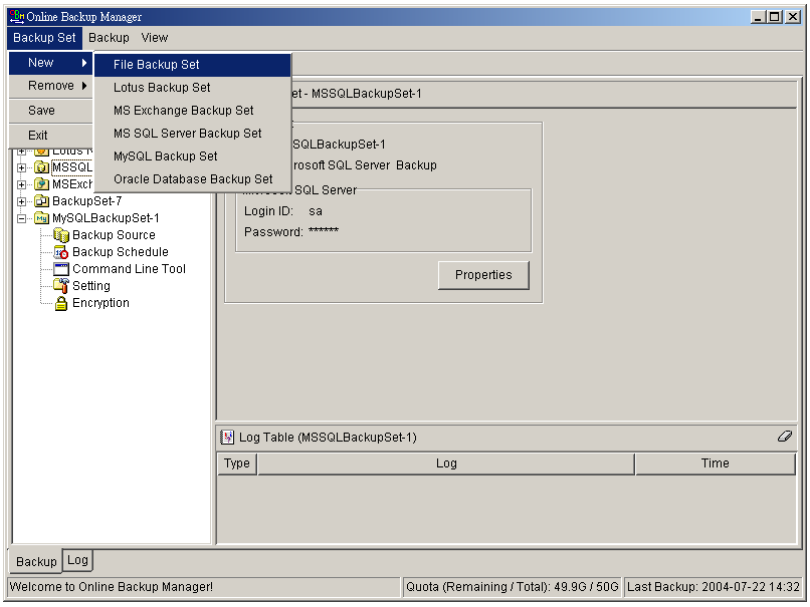
You can backup your data to an Ahsay Offsite Backup Server by following instructions below.

i. Open Ahsay Online Backup Manager

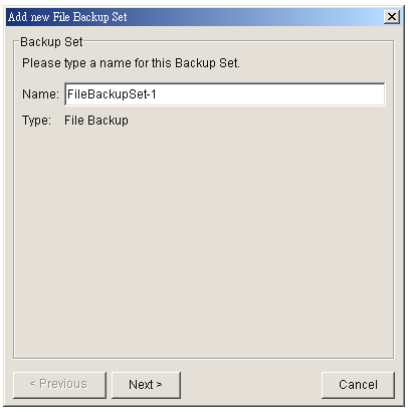
Right click Ahsay Online Backup Manager icon available in the system tray and choose [Open]

a. Create a backup set

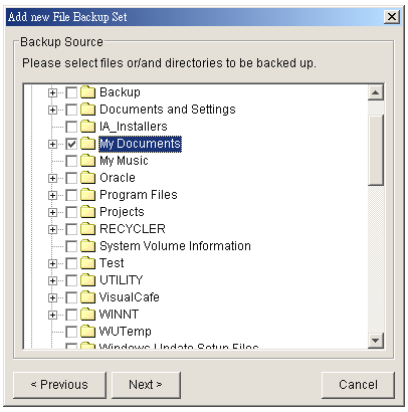
b. From the Menu, Choose [Backup Set] -> [New] -> [File Backup Set]



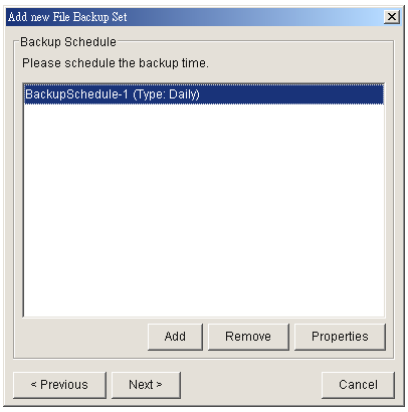
c. Enter a name for your backup set



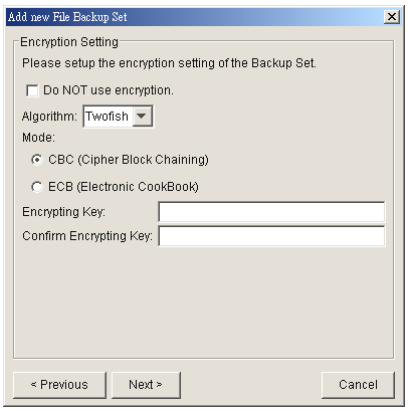
d. Select the files/directories you want to backup



e. Set the backup schedule (Note: You can have more than one schedule in a backup set)



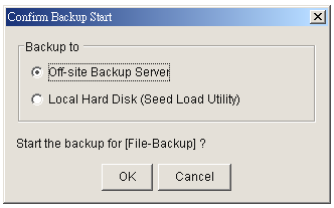
f. Set the encryption algorithm, encryption mode and encrypting key for this backup set
(Hint: For maximum security, please select AES (Advanced Encryption Standard) Algorithm, CBC (Cipher Block Chaining) mode and use an encrypting key with more than 8 characters.)



ii. Run Backup

a. Select the backup set you want to run on the left panel and press the [Start Backup] button (►) on the toolbar

b. Select [Off-site Backup Server] to start backing up your files to an Ahsay Offsite Backup Server.



Note:
1. You can have more than one backup set in backup account.
2. Please write the encrypting key down on paper and keep it in a safe place. If you lost your encrypti ng key is lost, you will not be able to restore your backup files.

Backing up a network drive (Scheduled)

If you have selected a network-mapped path as one of your backup sources, you will be presented with the dialog below.

Ahsay Online Backup Manager need to collect your Windows username, password and domain name to authenticate itself to the windows domain controller to acquire the required access privileges to the network files which are to be backed up. Please enter your Windows username, password and domain name into the fields provided and press the [OK] button.

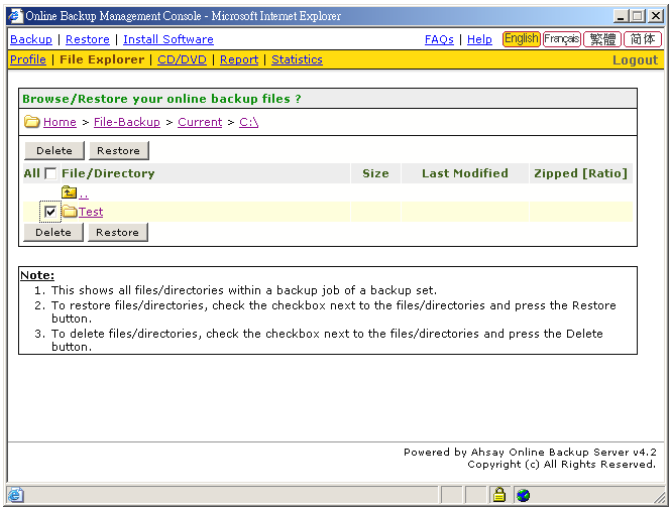
5.3 How to restore files

You can backup your data to an Ahsay Offsite Backup Server by following instructions below.

i. Logon to the Ahsay Offsite Backup Server web interface

ii. From the top menu, click [File Explorer]

iii. Select the backup files you want to restore



a. Browse the backup set

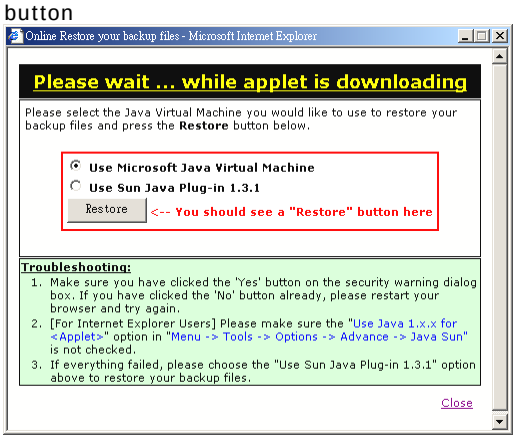
[Current] folder contains the latest copy of all backup files within a backup set. [yyyy-MM-dd (HH:mm)] folder contains the files that were removed from the [Current] folder at the time indicated. These folders contain all your deleted files and the previous version of all your updated files.

b. Select the files/directory you want to restore by checking the checkbox next to the files/directories

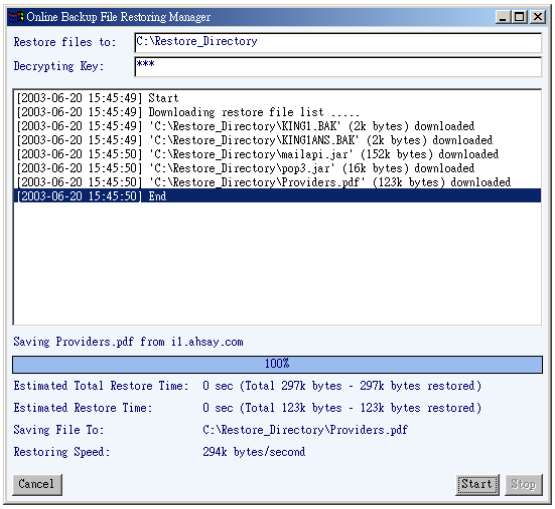
iv. Restore your backup files

a. Press the [Restore] button

b. Select the Java Virtual Machine (JVM) you want to use and Press the [Restore] button



c. Enter the directories to which backup files should be restored in the [Restore File to] textbox



d. Enter the encrypting key which will be used to decrypt your backup files upon restoring your backup files

e. Press the [Start] button

f. Press the [Start] button

Note:
1. Online File Restorer can be started using Microsoft Java Virtual Machine or Sun Java™ Plug-in 1.3.1.
2. Timestamps of the restored files will be reset to those of the original files only if Sun Java™ Plug-in 1.3.1 is used to restore your backup files. (Limitation of Microsoft Java Virtual Machine)

Troubleshooting
1. Make sure you have clicked the [Yes] button on the security warning dialog box. If you have clicked the [No] button already, please restart your browser and try again.
2. [For Internet Explorer Users] Please make sure the "Use Java 1.x.x for <Applet>" option in "Menu -> Tools -> Options -> Advance -> Java Sun" is not checked.
3. If everything failed, please choose the [Use Sun Java Plug-in 1.3.1] to restore your backup files.

5.4 How to perform seed loading of your backup data?

If you have a lot of data (e.g. 300GB) to backup to the backup server, it would take a considerable amount of time to perform the first full backup through the Internet. If you run into this problem, you can use the Seed Loading Utility to backup your backup set to local hard disk (instead of directly to the backup server) and then transport the backup data, using removable hard disk, to the offsite backup server. The administrator can then load all your backup files from your removable hard disk into your backup account. This could then save you days (even weeks) of performing your first full backup. Since subsequent backup will be incremental backup (only new or updated files will be uploaded to the server), you should have no problems finishing backing up all files afterwards.

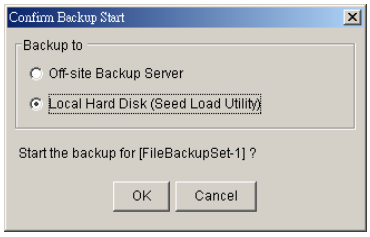
To perform seeding loading, please do the following:

i. Open Ahsay Online Backup Manager from the System Tray (see previous sections for details)

ii. Setup your backup set (see previous sections for details)

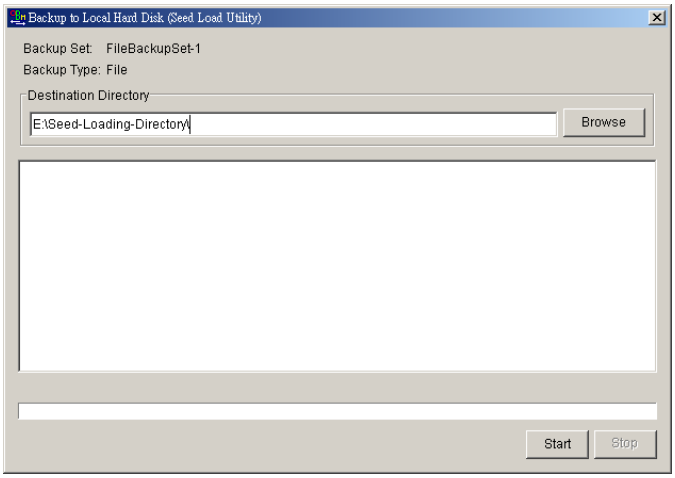
iii. Select the backup set you want to run on the left panel and press the [Start Backup] button (►) on the toolbar

iv. Select [Local Hard Disk (Seed Load Utility)] to start backing up your files to local hard disk and press the [OK] button

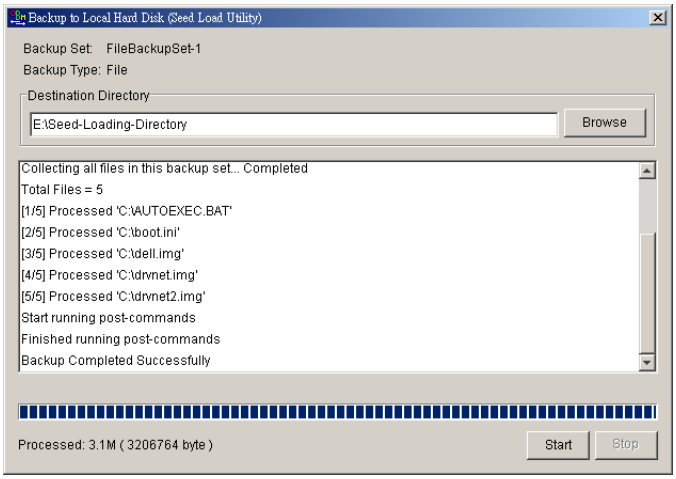


v. Enter a directory where you want all backup files to be stored in the [Destination Directory] field and press the [Start] button.

Please make sure you have enough free space in the directory specified. If you are going to transport a removable hard disk to the offsite backup server, please enter a directory under your removable hard disk here.



vi. You should get the message "Backup Completed Successfully" as shown below after all backup files are spooled to the directory you specified.



vii. Transport the data specified in the [Destination Directory] field to the offsite backup server

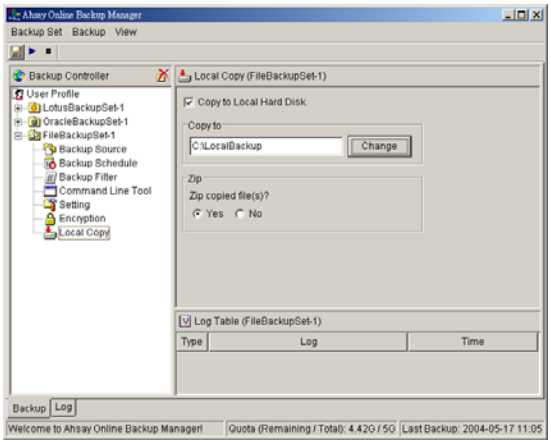
5.5 How to save an extra copy of backup on local hard disk?

If you want to save an extra copy of backup data on your local disk (in addition to a copy of backup data stored on the backup server) to minimize file-restoring time and/or to provide an extra safety precaution, you can do the following:

i. Open Ahsay Online Backup Manager from the System Tray (see previous sections for details)

ii. Setup your backup set (see previous sections for details)

iii. Select [Local Copy] under your backup set from the left panel

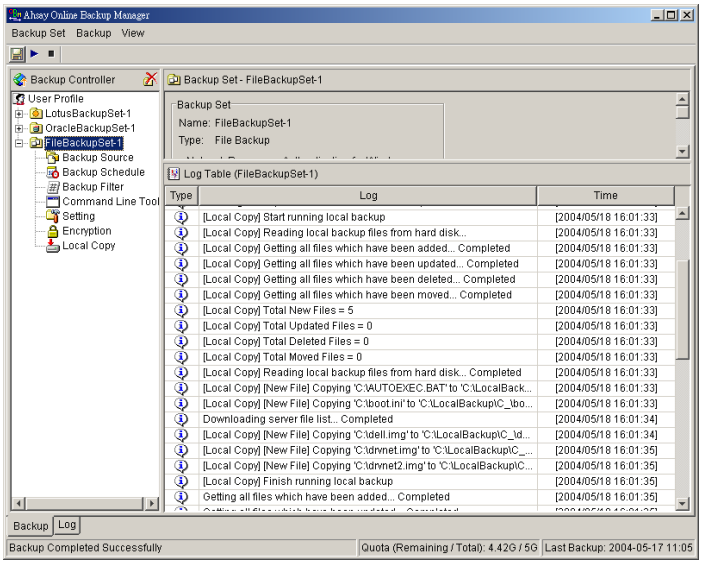


iv. Check the [Copy to Local Hard Disk] checkbox

v. Enter a directory to where you want an extra copy of your backup files to be stored in the [Copy to] field provided (preferably a directory under another hard disk)

vi. (Optional) Select the [Yes] radio button if you want to store your backup files in compressed form to conserve free space usage

vii. An extra copy of backup will be saved in the [Copy to] directory when you run your backup job



6 Backup/Restore Oracle 8i/9i

This chapter will describe in details how Ahsay Online Backup Manager backup your Oracle 8i/9i and how you can restore an Oracle 8i/9i database using the backup files.

6.1 Requirements

i. Ahsay Online Backup Manager must be installed onto the computer that can connect to your Oracle 8i/9i server using TCP/IP protocol.

ii. Data from Oracle 8i/9i database will be backed up to a temporary directory before they are sent to Ahsay Offsite Backup Server. Please make sure you have sufficient space on your computer to store these data when you run the backup job.

iii. Database must be in archived log mode

To switch to archived log mode and enable automatic log archiving, please do the following:

a. Set the parameters below in the PFILE to enable automatic archiving

```
log_archive_dest = [directory where archived logs will be stored]
log_archive_format = ARCH%S.LOG
log_archive_start = TRUE
```

b. Switch to archived log mode

```
SVRMGRL> connect internal;
SVRMGRL> startup mount;
SVRMGRL> alter database archivelog;
SVRMGRL> alter database open;
```

c. Oracle JVM is enabled

To enable Oracle JVM for Oracle 8i/9i, please do the following:

1. Please make sure shared pool size is larger than 50MB and java pool size is larger than 20MB in the PFILE. For example:

```
java_pool_size = 20971520
shared_pool_size = 52428800
```

2. Run the scripts below

Oracle 8i	Oracle 9i
SVRMGRL> connect internal SVRMGRL> @?/javavm/install/initjvm.sql; SVRMGRL> @?/rdbms/admin/catalog.sql; SVRMGRL> @?/rdbms/admin/catproc.sql; SVRMGRL> @?/javavm/install/initdbj.sql;	SQL> connect sys/change_on_install as sysdba SQL> @?/javavm/install/initjvm.sql; SQL> @?/xdk/admin/initxml.sql; SQL> @?/xdk/admin/xmlja.sql; SQL> @?/rdbms/admin/catjava.sql;

iv. JAVASYSPRIV role is granted to system account

You can grant this role to system account by executing:

SQL> grant JAVASYSPRIV to system;

6.2 Overview

Ahsay Online Backup Manager will backup your Oracle database by taking the following steps.

i. Connect to the Oracle database using SQL*NET over TCP/IP

ii. Run all Pre-Commands of this backup set

iii. If the backup type to run is [Database Backup type],

a. all data files in each of the tablespace(s) selected are copied to the temporary directory specified by this backup set

b. if there are temporary files in the database, the script to re-create the temporary files are generated to a file located in the temporary directory specified by this backup set

c. all non-default initialization parameters will be spooled to an initializing file located in the temporary directory specified by this backup set

d. all control files will be copied to the temporary directory specified by this backup set

e. all archived log files will be copied to the temporary directory specified by this backup set

iv. If the backup type to run is [Archived Log Backup type],

a. all archived log files will be copied to the temporary directory specified by this backup set

v. Run all Post-Commands of this backup set

vi. Upload all files copied to the temporary directory to the Ahsay Offsite Backup Server

Note:
If your Oracle database is running on Windows, please install Ahsay Online Backup Manager onto the company running the Oracle database if Ahsay Online Backup Manager is to backup this Oracle database. This would shorten the time required to backup the Oracle database.

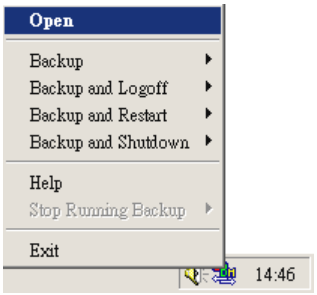
6.3 How to backup an Oracle Database

Please follow the instructions below to backup your Oracle database to the Ahsay Offsite Backup Server.

i. Install Ahsay Online Backup Manager onto your computer

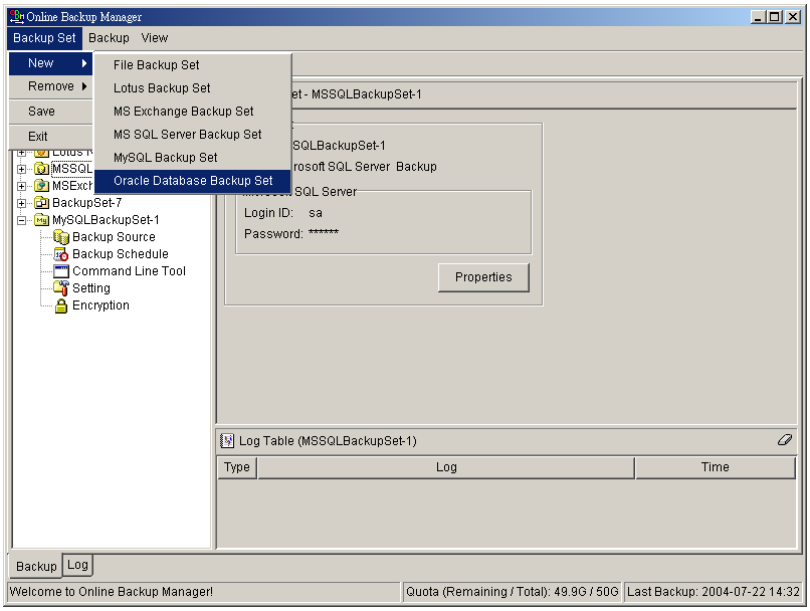
ii. Open Ahsay Online Backup Manager

Right click Ahsay Online Backup Manager icon available in the system tray and choose [Open]

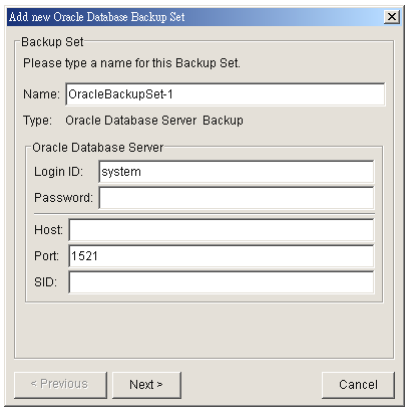


iii. Create a backup set

a. From the Menu, Choose [Backup Set] -> [New] -> [Oracle Database Backup Set]

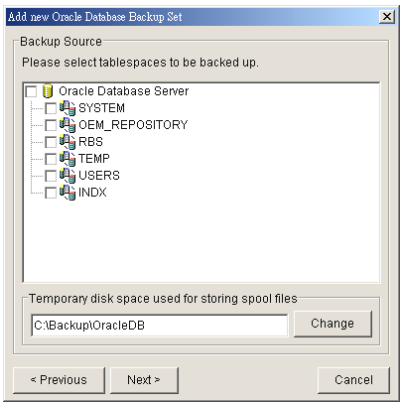


b. Enter a name for your backup set



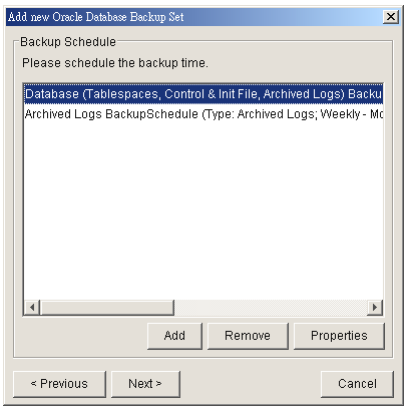
c. Enter the system password, the Oracle Database Server Host Name, TNS Port and SID

d. Select the tablespace(s) you want to backup



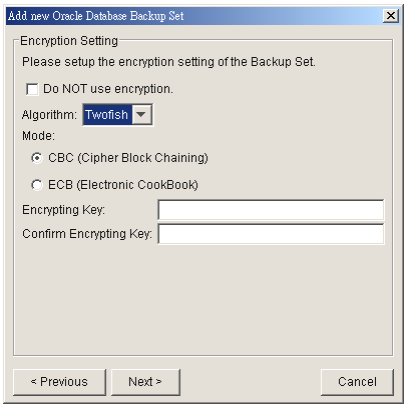
e. Enter a temporary location to store the database file(s) before they are sent to an Ahsay Offsite Backup Server

f. Set the backup schedule for database backup and archived log backup



Note: You can have more than one schedule in a backup set, i.e. you can perform intra-day transaction log backup by adding more than one daily transaction log backup schedule to your backup set.

g. Set the encryption algorithm, encryption mode and encrypting key for this backup set

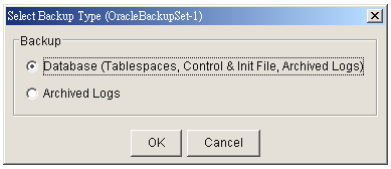


Hint: For maximum security, please select AES (Advanced Encryption Standard) Algorithm, CBC (Cipher Block Chaining) mode and use an encrypting key with more than 8 characters.

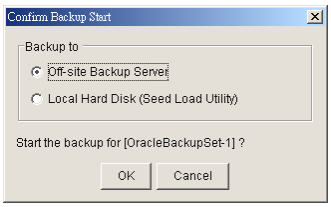
iv. Run Backup

a. Select the backup set you want to run on the left panel and press the [Start Backup] button (►)

b. Select the backup type (e.g. Database Backup, Archived Log Backup) you would like to perform



c. Select [Off-site Backup Server] to start backing up your files to an Ahsay Offsite Backup Server.



6.4 How to restore an Oracle Database

Please follow the instructions below to restore your Oracle 8i/9i databases from an Ahsay Offsite Backup Server.

i. Download the backup files from the Ahsay Offsite Backup Server

Please refer to the [Quick Start - Backup File] section for information on how to download backup files from Ahsay Offsite Backup Server.

ii. Put all data files back to their original locations

iii. Control files, data files and archived logs are stored on Ahsay Offsite Backup Server along with their full path information. You just need to put all these files back to their original locations when performing a database restore.

iv. Put the PFILE back to its default location

Oracle 8i: $ORACLE_HOME/dbs/init<SID>.ora
Oracle 9i: $ORACLE_HOME/admin/<SID>/pfile/init.ora

v. Restore Database

(if Oracle 8i) Use Server Manager to restore you database by doing the following:

a. Run Oracle Server Manager (svrmgrl)

b. Connect to the target database

c. Startup mount

d. Reapply all transactions from the archived log files

e. Open database

Oracle 8i Example:

```
$ svrmgrl

SVRMGRL> connect internal

SVRMGR> startup mount;
ORACLE instance started.
Total System Global Area               95874448 bytes
Fixed Size                                64912 bytes
Variable Size                          52744192 bytes
Database Buffers                       40960000 bytes
Redo Buffers                            2105344 bytes
Database mounted.

SVRMGRL> recover database using backup controlfile
ORA-00279: change 419671 generated at 06/14/03 02:51:49 needed for thread 1
ORA-00289: suggestion : /data/ora815/vin/archive/ARCH0000000225.LOG
ORA-00280: change 419671 for thread 1 is in sequence #225
ORA-00278: log file '/data/ora815/vin/archive/ARCH0000000224.LOG' no longer needed for this
recovery
Specify log: {<RET>=suggested | filename | AUTO | CANCEL}
AUTO
Log applied.
. . . . . .
ORA-00279: change 547222 generated at 06/18/03 19:58:26 needed for thread 1
ORA-00289: suggestion : /data/ora815/vin/archive/ARCH0000000384.LOG
ORA-00280: change 547222 for thread 1 is in sequence #384
ORA-00278: log file '/data/ora815/vin/archive/ARCH0000000383.LOG' no longer needed for this
recovery
ORA-00308: cannot open archived log '/data/ora815/vin/archive/ARCH0000000384.LOG'
ORA-27037: unable to obtain file status
Linux Error: 2: No such file or directory
Additional information: 3

SVRMGR> recover database using backup controlfile until cancel
ORA-00279: change 547222 generated at 06/18/03 19:58:26 needed for thread 1
ORA-00289: suggestion : /data/ora815/vin/archive/ARCH0000000384.LOG
ORA-00280: change 547222 for thread 1 is in sequence #384
Specify log: {<RET>=suggested | filename | AUTO | CANCEL}
CANCEL
Media recovery cancelled.
SVRMGR> alter database open resetlogs;
Statement processed.
```

(if Oracle 9i) Use Recovery Manager to restore you database by doing the following:

a. Run Oracle Server Manager (rman)

b. Connect to the target database

c. Startup mount

d. Reapply all transactions from the archived log files to the last sequence

e. Open database

Oracle 9i Example:

```
C:\>rman nocatalog

Recovery Manager: Release 9.2.0.1.0 - Production

Copyright (c) 1995, 2002, Oracle Corporation.  All rights reserved.
```

```
RMAN> connect target

connected to target database (not started)

RMAN> startup mount

connected to target database (not started)
Oracle instance started
database mounted

Total System Global Area    269556596 bytes

Fixed Size                    453492 bytes
Variable Size              243269632 bytes
Database Buffers            25165824 bytes
Redo Buffers                  667648 bytes

RMAN> recover database until sequence=63 thread=1;

Starting recover at 24-JUN-03
allocated channel: ORA_DISK_1
channel ORA_DISK_1: sid=11 devtype=DISK

starting media recovery

archive log thread 1 sequence 56 is already on disk as file
C:\ORACLE\ORADATA\VIN\ARCHIVE\1_56.DBF
archive log filename=C:\ORACLE\ORADATA\VIN\ARCHIVE\1_56.DBF thread=1 sequence=56
archive log filename=C:\ORACLE\ORADATA\VIN\ARCHIVE\1_57.DBF thread=1 sequence=57
archive log filename=C:\ORACLE\ORADATA\VIN\ARCHIVE\1_58.DBF thread=1 sequence=58
archive log filename=C:\ORACLE\ORADATA\VIN\ARCHIVE\1_59.DBF thread=1 sequence=59
archive log filename=C:\ORACLE\ORADATA\VIN\ARCHIVE\1_60.DBF thread=1 sequence=60
archive log filename=C:\ORACLE\ORADATA\VIN\ARCHIVE\1_61.DBF thread=1 sequence=61
archive log filename=C:\ORACLE\ORADATA\VIN\ARCHIVE\1_62.DBF thread=1 sequence=62
media recovery complete
Finished recover at 24-JUN-03

RMAN> alter database open resetlogs;

database opened
```

7 Backup/Restore Microsoft SQL Server 7.0 / 2000

This chapter will describe in details how to use Ahsay Online Backup Manager to backup your Microsoft SQL Server 7.0 / 2000 server and how you can restore your Microsoft SQL Server 7.0 / 2000 server from the backup files.

7.1 Requirements

i. Ahsay Online Backup Manager must be installed onto the computer running Microsoft SQL Server.

ii. Data from Microsoft SQL Server will be backed up to a temporary directory before they are sent to Ahsay Offsite Backup Server. Please make sure you have sufficient space on your computer to store these data when you run the backup job.

7.2 Overview

Ahsay Online Backup Manager will backup your Microsoft SQL Server database(s) by taking the following steps:

i. Before running any backup activities, Ahsay Online Backup Manager will run all Pre-Commands of the backup set.

ii. For each database that is to be backed up, Ahsay Online Backup Manager will issue a database / transaction log backup command to Microsoft SQL Server to backup each database to a Microsoft SQL Server database backup file (*.bak file) and save it in the temporary directory you specified.

iii. After all *.bak files have been spooled to the temporary directories, Ahsay Online Backup Manager will run all Post-Commands of the backup set.

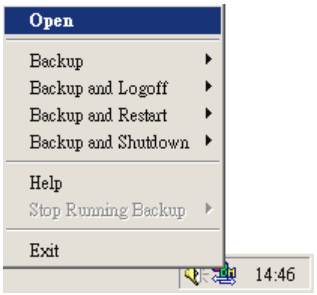
iv. Upload all files copied to the temporary directory to the Ahsay Offsite Backup Server.

7.3 How to backup Microsoft SQL Server database(s)

Please follow the instructions below to backup your Microsoft SQL Server databases using Ahsay Online Backup Manager.

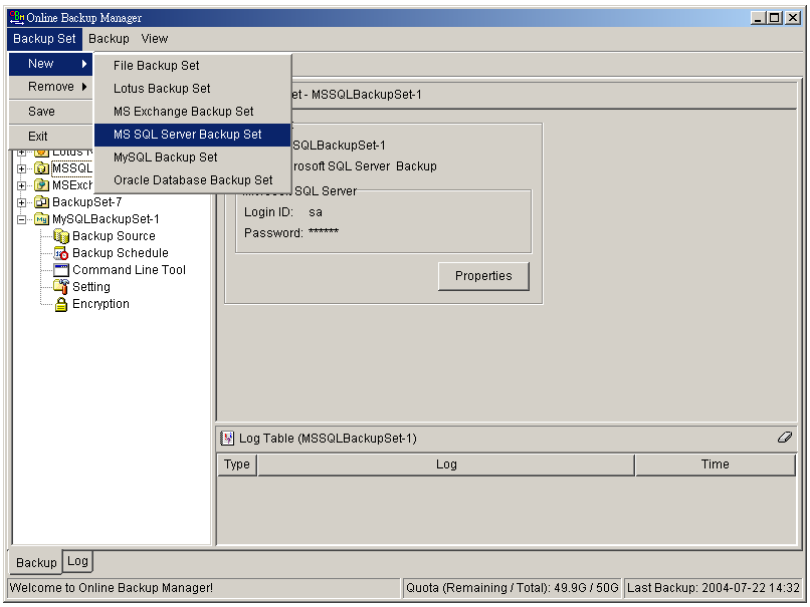
i. Open Ahsay Online Backup Manager

Right click Ahsay Online Backup Manager icon available in the system tray and choose [Open]

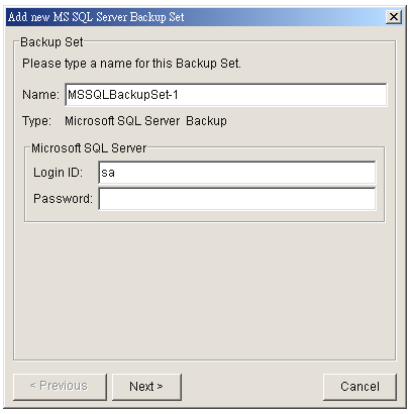


ii. Create a backup set

a. From the Menu, Choose [Backup Set] -> [New] -> [MS SQL Server Backup Set]

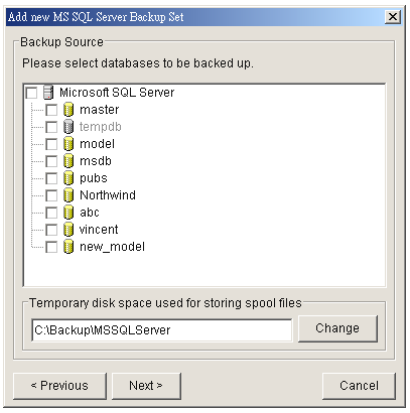


b. Enter a name for your backup set



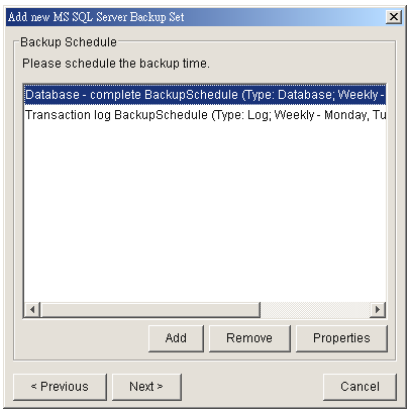
c. Enter the Microsoft SQL Server administrator username and password

d. Select the database(s) you want to backup



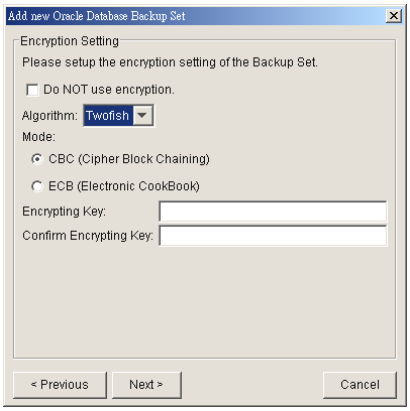
e. Enter a temporary location to store the backup files before they are sent to an Ahsay Offsite Backup Server

f. Set the backup schedule for full database backup and transaction log backup



(Note: You can have more than one schedule in a backup set, i.e. you can perform intra-day transaction log backup by adding more than one daily transaction log backup schedule to your backup set)

g. Set the encryption algorithm, encryption mode and encrypting key for this backup set

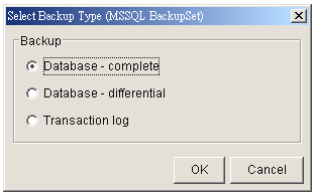


(Hint: For maximum security, please select AES (Advanced Encryption Standard) Algorithm, CBC (Cipher Block Chaining) mode and use an encrypting key with more than 8 characters.)

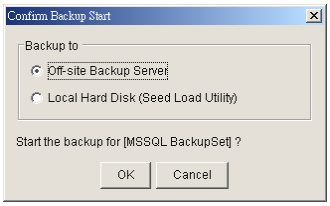
iii. Run Backup

a. Select the backup set you want to run on the left panel and press the [Start Backup] button (►)

b. Select the backup type (e.g. Complete, Differential, Transaction Log) you would like to perform



c. Select [Off-site Backup Server] to start backing up your files to an Ahsay Offsite Backup Server.



7.4 How to restore Microsoft SQL Server database(s)

Please follow the instructions below to restore your Microsoft SQL Server databases from an Ahsay Offsite Backup Server.

i. Download the backup files (.bak) from the Ahsay Offsite Backup Server

Please refer to the [Quick Start - Backup File] section for information on how to download backup files from Ahsay Offsite Backup Server.

ii. Open Microsoft SQL Enterprise Manager

You can open Microsoft SQL Enterprise Manager from [Start Menu] -> [Program] -> [Microsoft SQL Server] -> [Enterprise Manager]

iii. (Optional) Restore "master" database

You need to restore "master" database if you:

a. are rebuilding all your databases from scratch

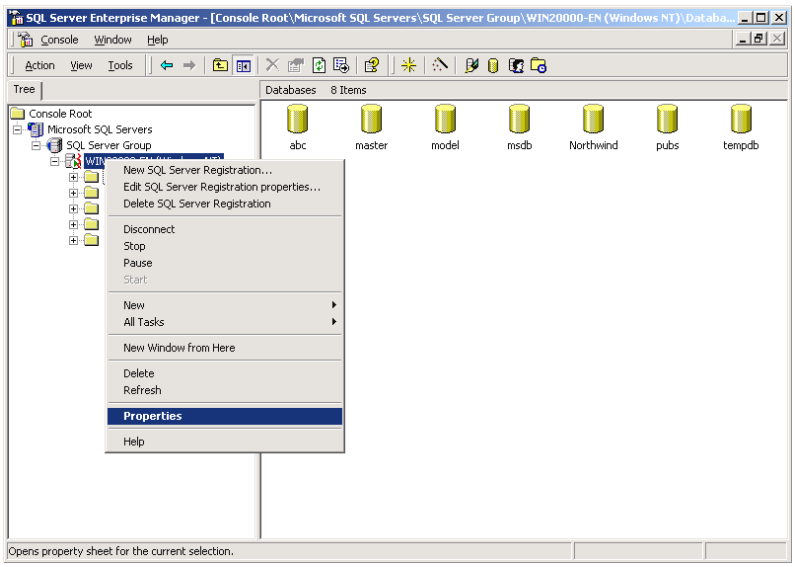
b. have changing any server-wide or database configuration options
c. have added logins or other login security-related operations.
d. have created or removed logical backup devices.
e. have configured the server for distributed queries and remote procedure calls, such as adding linked servers or remote logins.

You do not need to restore your master database if you just want to restore a user database. For more information on Microsoft SQL Server "master" database, please visit http://www.microsoft.com/sql/.

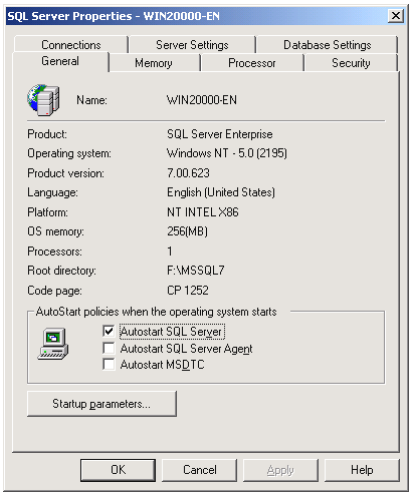
To restore "master" database, please do the following:

a. Start Microsoft SQL Server in "Single User Mode"

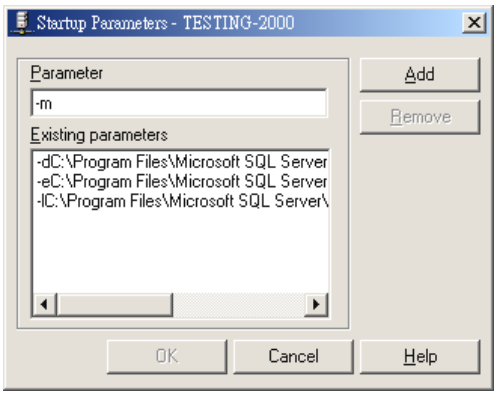
1. Right click your Microsoft SQL Server and select [Properties]



2. Press the [Startup Parameters] button

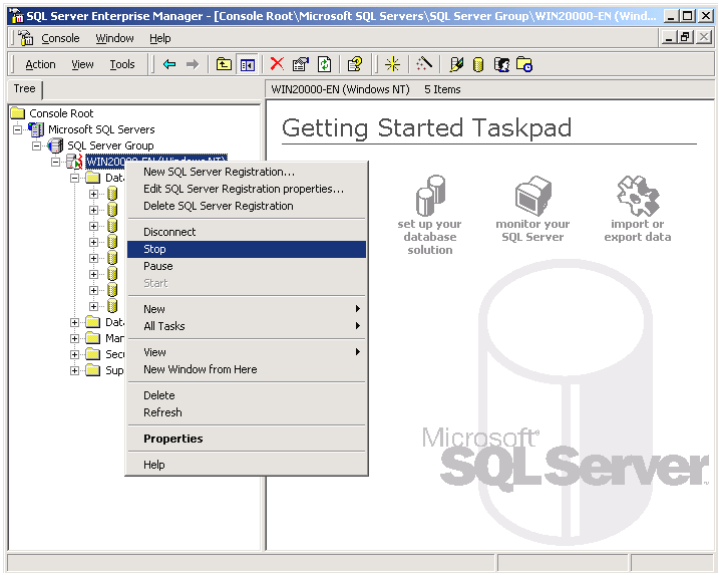


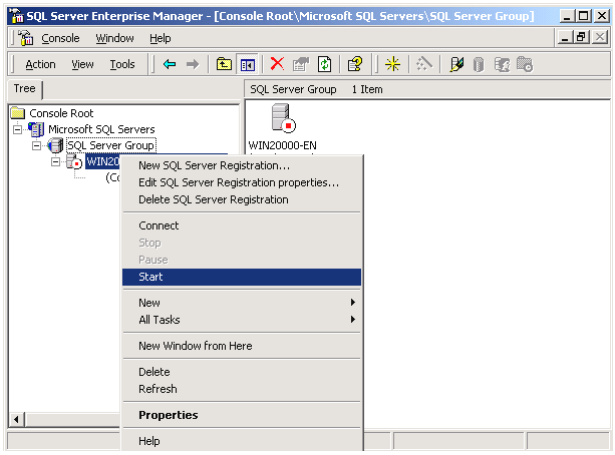
3. Add a "-m" parameter to the [Startup Parameters]



4. Restart Microsoft SQL Server

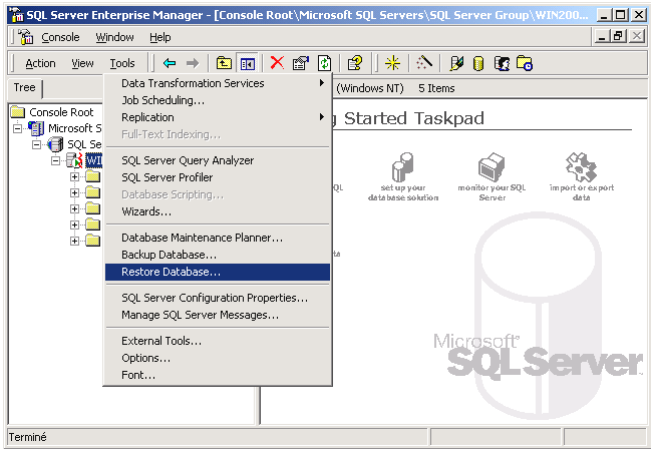
From [Enterprise Manager], right click your Microsoft SQL Server and select [Stop] and then [Start].





b. Restore "master" database

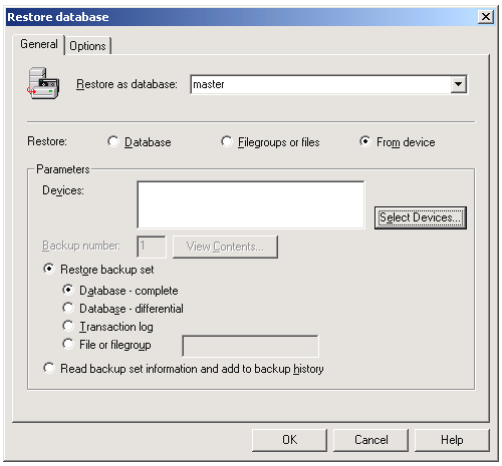
1. From [Enterprise Manager] -> [Tools] -> [Restore Database]



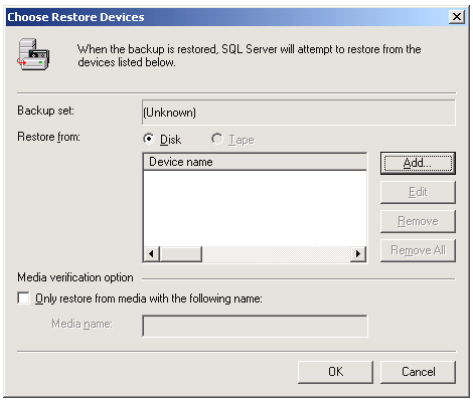
2. Select [master] in the [Restore as database] drop down list

3. Select the [From device] radio button.

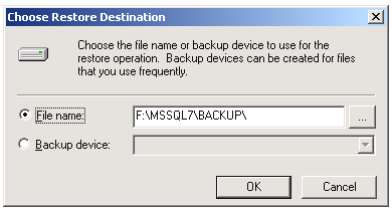
4. Press the [Select Devices] button.



5. From the [Choose Restore Devices], press the [Add] button.



6. From the [Choose Restore Destination] panel, press the […] button to choose your master backup (*.bak) from your backup files



7. Press the [OK] button, to start restoring the "master" database.

c. Restart Microsoft SQL Server in "Normal Mode"

1. Remove "-m" parameter from the [Startup Parameters] as in previous step

2. Restart your Microsoft SQL Server as in previous step

iv. (Optional) Restore "model", "msdb" and "distribution" database

You need to restore "model" database if you have changed the database template of your SQL Server.

You need to restore "msdb" database if you have changed the scheduling information or you want to restore the backup and restore history of your databases.

You need to restore "distribution" database if you are running the replication components of SQL Server.

You do not need to restore these databases if you just want to restore a user database. For more information on Microsoft SQL Server "model", "msdb" and "distribution" database, please visit http://www.microsoft.com/sql/.

You need to restore each of these databases one by one. To restore any of these databases, please do the following:

a. From [Enterprise Manager] -> [Tools] -> [Restore Database]

b. Select the database to be restored in the [Restore as database] drop down list

c. Select the [From device] radio button.

d. Press the [Select Devices] button

e. Press the [...] button to choose your backup files (*.bak) for the database to be restored

f. Press the [OK] button

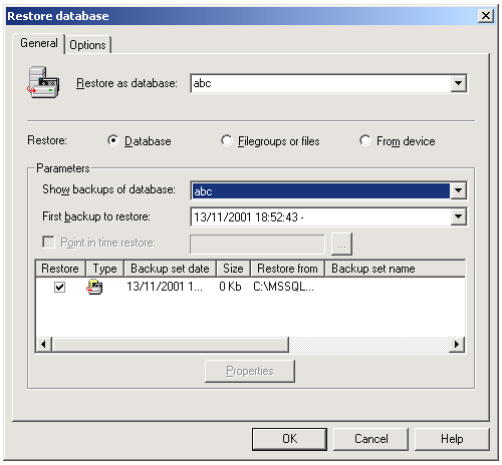
v. Restore user database(s)

For each of the database you would like to restore,

a. From [Enterprise Manager] -> [Tools] -> [Restore Database]

b. Select the database to be restored in the [Restore as database] drop down list

c. Select the [Database] radio button.



d. From the [Show backups of database] drop down list, select the database to be restored

e. From the [First backup to restore] drop down list, select the snapshot of the database you would like to restore to.

You can restore your database to the snapshot of your database at any point of the time between the time you did your full backup and the time you did your last subsequent backup.

f. Change the [Restore From] entry

If you backup files (*.bak) are not in the default directory, you need to update the full path to your backup files by pressing the [Properties] button.

g. Press the [OK] button

vi. All database(s) restored successfully

8 Backup/Restore Lotus Domino / Notes

This chapter will describe in details how to use Ahsay Online Backup Manager to backup your Lotus Domino server / Notes client 5 / 6 / 6.5 and how you can restore your Lotus Domino server / Notes client 5 / 6 / 6.5 from the backup files.

8.1 Requirements

i. Ahsay Online Backup Manager must be installed onto the computer running Lotus Domino server / Notes client.

ii. Data from Lotus Domino server / Notes client will be backed up to a temporary directory before they are sent to Ahsay Offsite Backup Server. Please make sure you have sufficient space on your computer to store these data when you run the backup job.

iii. Lotus Domino server must runs with archive transaction logging enabled

To set up transaction logging in archive style, please do the following:

a. Ensure that all databases to be logged reside in the Domino data directory, either at the root or in subdirectories.

b. From the Domino Administrator, click the Configuration tab.

c. In the "Use Directory on" field, choose the server's Domino Directory.

d. Click Server Configuration, and then click Current Server Document.

e. Click the Transactional Logging tab.

f. Complete these fields, and then save the document.

Field	Enter
Transactional Logging	Choose Enabled. The default is Disabled.
Log path	Path name location of the transaction log. The default path name is \LOGDIR in the Domino data directory, although it is strongly recommended to store the log on a separate, mirrored device, such as a RAID (Redundant Array of Independent Disks) level 0 or 1 device with a dedicated controller. The separate device should have at least 1GB of disk space for the transaction log. If you are using the device solely for storing the transaction log, set the "Use all available space on log device" field to Yes.
Maximum log space	The maximum size, in MB, for the transaction log. Default is 192MB. Maximum is 4096MB (4GB). Domino formats at least 3 and up to 64 log files, depending on the maximum log space you allocate.

Use all available space on log device	Choose one: • Yes to use all available space on the device for the transaction log. This is recommended if you use a separate device dedicated to storing the log. If you choose Yes, you don't need to enter a value in the "Maximum log space" field. • No to use the default or specified value in the "Maximum log space" field.
Automatic fixup of corrupt databases	Choose one: • Enabled (default). If a database is corrupt and Domino cannot use the transaction log to recover it, Domino runs the Fixup task, assigns a new DBIID, and notifies the administrator that a new database backup is required. • Disabled. Domino does not run the Fixup task automatically and notifies the administrator to run the Fixup task with the -J parameter on corrupt logged databases.
Runtime / Restart performance	This field controls how often Domino records a recovery checkpoint in the transaction log, which affects server performance. To record a recovery checkpoint, Domino evaluates each active logged database to determine how many transactions would be necessary to recover each database after a system failure. When Domino completes this evaluation, it: • Creates a recovery checkpoint record in the transaction log, listing each open database and the starting point transaction needed for recovery • Forces database changes to be saved to disk if they have not been saved already Choose one: • Standard (default and recommended). Checkpoints occur regularly. • Favor runtime. Domino records fewer checkpoints, which requires fewer system resources and improves server run time performance. • Favor restart recovery time. Domino records more checkpoints, which improves restart recovery time because fewer transactions are required for recovery.
Logging style	Choose Archive. The default is Circular.

Notes:
You can only run transaction log backup if you have transaction logging enabled and you are using archive mode. This command does not apply if you have transaction logging enabled not in archive mode or if transaction logging is not enabled at all. If you try to issue it, you will receive an error message.

8.2 Overview

Ahsay Online Backup Manager will backup your Lotus Domino server / Notes client by taking the following steps:

i. Run all Pre-Commands of this backup set

ii. If the backup type to run is [Database Backup type],

   a. all file(s) / database(s) selected are copied to the temporary directory specified by this backup set

   b. the notes.ini file, if selected, will be copied to the temporary directory

   c. only filled log extents will be copied to the temporary directory, and the Domino server is notified of their availability for reuse (for Domino server only)

iii. (for Domino server only) If the backup type to run is [Transaction Log Backup type],

   a. only filled log extents will be copied to the temporary directory, and the Domino server is notified of their availability for reuse

iv. Run all Post-Commands of this backup set

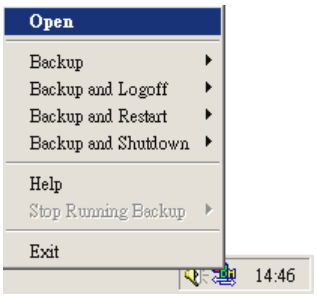
v. Upload all files copied to the temporary directory to the Ahsay Offsite Backup Server

8.3 How to backup Lotus Domino / Notes database(s) / file(s)

Please follow the instructions below to backup your Lotus Domino server / Notes client databases / files using Ahsay Online Backup Manager.

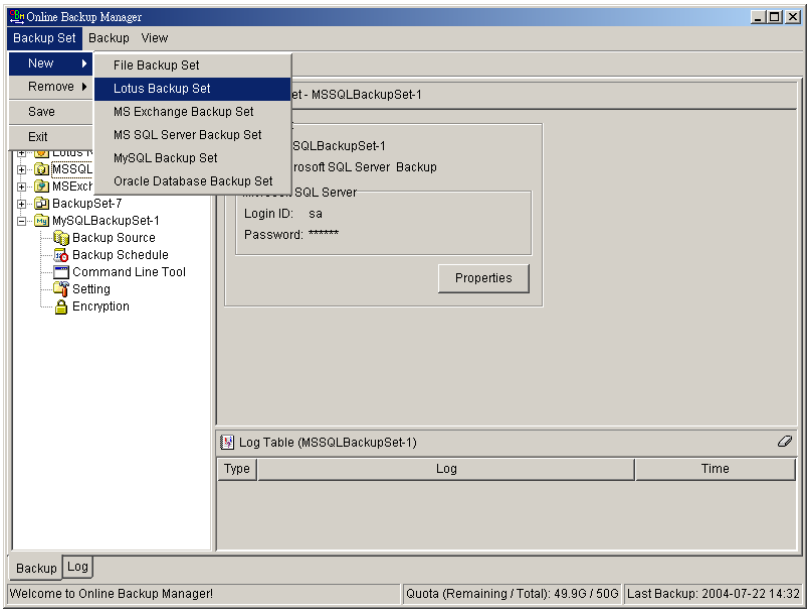
i. Open Ahsay Online Backup Manager

   Right click Ahsay Online Backup Manager icon available in the system tray and choose [Open]

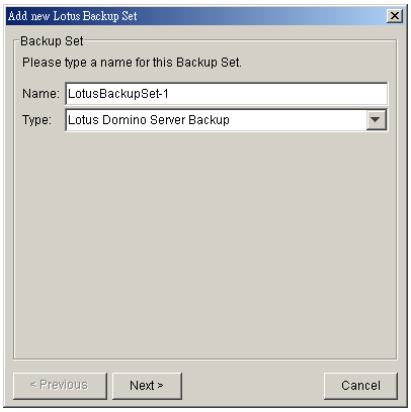


ii. Create a backup set

a. From the Menu, Choose [Backup Set] -> [New] -> [Lotus Backup Set]

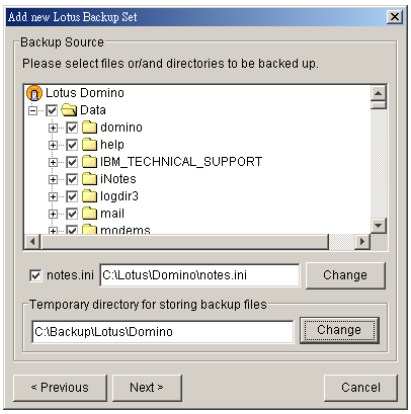


b. Enter a name for your backup set



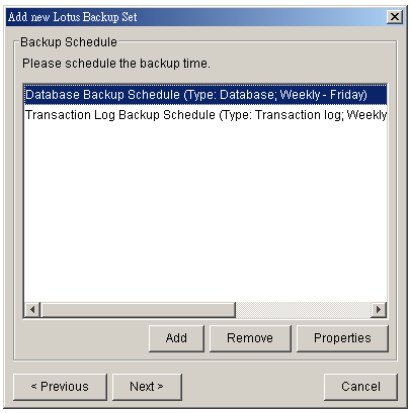
c. Select the Backup Set Type (Lotus Domino Server Backup / Lotus Notes Client Backup)

d. Select the database(s) / file(s) you want to backup



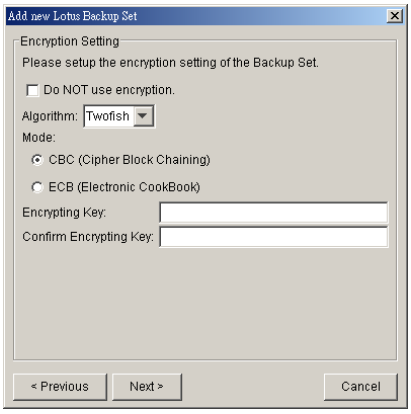
e. Enter a temporary location to store the backup files before they are sent to an Ahsay Offsite Backup Server

f. Set the backup schedule for Database Backup



g. Set the backup schedule for Transaction Log Backup (for Domino server only) (Note: You can have more than one schedule in a backup set, i.e. you can perform intra-day transaction log backup by adding more than one daily transaction log backup schedule to your backup set)

h. Set the encryption algorithm, encryption mode and encrypting key for this backup set

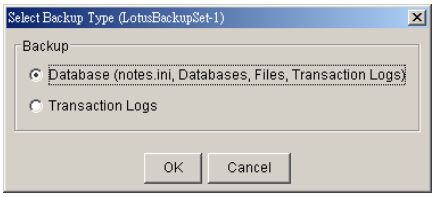


(Hint: For maximum security, please select AES (Advanced Encryption Standard) Algorithm, CBC (Cipher Block Chaining) mode and use an encrypting key with more than 8 characters.)

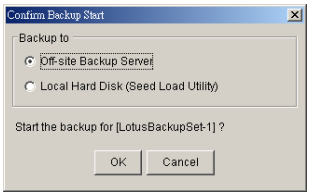
iii. Run Backup

a. Select the backup set you want to run on the left panel and press the [Start Backup] button (►)

b. Select the backup type (e.g. Database, Transaction Log) you would like to perform (for Domino server only)



c. Select [Off-site Backup Server] to start backing up your files to an Ahsay Offsite Backup Server.



8.4 How to restore Lotus Domino / Notes database(s) / file(s)

Please follow the instructions below to restore Lotus Domino server / Notes client database(s) / file(s) from an Ahsay Offsite Backup Server.

i. Install Lotus Domino server / Notes client back to its original folder (if required)

ii. Install Ahsay Online Backup Manager

Please refer to the [Installation] section for information on how to install Ahsay Online Backup Manager onto your computer.

iii. Copy LotusMediaRecovery.exe from the bin directory (default to C:\Program Files\AhsayOBM\bin) to Lotus Domino installation directory (default to C:\Lotus\Domino)

iv. Shutdown Lotus Domino Server

v. If you want to perform a full domino restore (restore all databases and files):

a. Download the backup files to be restored from the Ahsay Offsite Backup Server and save them back to its original location. It includes notes.ini, all backup files from the lotus domino data directory and all archived transaction logs

b. Run LotusMediaRecovery.exe from the Lotus Domino installation directory (e.g. C:\Lotus\Domino\LotusMediaRecovery.exe) and press 'Y' to continue.

For example: C:\Lotus\Domino\> LotusMediaRecovery.exe

This will run media recovery for all databases (*.nsf and mail.box) found under the Lotus data directory (e.g. C:\Lotus\Domino\Data). You should see something similar to the screen below.

Media Recovery Example:

```
C:\Lotus\Domino>LotusMediaRecovery
Media Recovery Utility for Lotus Domino 5.0 or above

Please make sure that you have done the following:
1. Reinstall Lotus Domino on this computer in the same directory
2. Restore Notes.ini to the Lotus Domino installation directory
   (e.g. C:\Lotus\Domino)
3. Restore Domino Data directory back to the directory defined
   in Notes.ini (e.g. C:\Lotus\Domino\Data)
4. Restore all archived transaction logs to the directory defined
   in Notes.ini (e.g. C:\Lotus\Domino\Data\logdir)

Continue ? (Y) or (N) y
Running media recovery ...
Please wait, creating new transaction logs in directory: C:\logdir\
02/12/2003 14:39:19   Recovery Manager: Restart Recovery complete. (0/0
databases needed full/partial recovery)
Media Recovery Replay (122 MB): 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
02/12/2003 14:39:22   Recovery Manager: Media Recovery complete for
C:\Lotus\Domino\Data\admin4.nsf, last update applied .

 Backup file C:\Lotus\Domino\Data\admin4.nsf recovered.

……
```

```
Media Recovery Replay (122 MB): 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
02/12/2003 14:40:57   Recovery Manager: Media Recovery complete for
C:\Lotus\Domino\Data\statrep.nsf, last update applied .

 Backup file C:\Lotus\Domino\Data\statrep.nsf recovered.

C:\Lotus\Domino>
```

c. All content of all database(s) are now rolled forward to the last committed transaction found in the last archived transaction log.

d. Restart Lotus Domino server

vi. If you just want to restore a single database:

a. Download the database file to be restored from the Ahsay Offsite Backup Server and save them back to its original location.

b. (optional) If you need to perform media recovery on this database, please download all archived transaction logs and save them back to its original location

c. Run LotusMediaRecovery.exe from the Lotus Domino installation directory with an argument of the full path of database to be restored.

For example, if you want to restore C:\Lotus\Domino\data\admin4.nsf, please run:

C:\Lotus\Domino\> LotusMediaRecovery.exe C:\Lotus\Domino\data\admin4.nsf

You should see something similar to the screen below.

Media Recovery Example:

```
C:\Lotus\Domino>LotusMediaRecovery C:\Lotus\Domino\data\admin4.nsf
Media Recovery Utility for Lotus Domino 5.0 or above

Running media recovery ...
Restart Analysis (0 MB): 100%
02/12/2003 14:42:15   Recovery Manager: Restart Recovery complete. (0/0
databases needed full/partial recovery)
Media Recovery Replay (122 MB): 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
02/12/2003 14:42:17   Recovery Manager: Media Recovery complete for
C:\Lotus\Domino\data\admin4.nsf, last update applied 01/12/2003 00:02:42.

 Backup file C:\Lotus\Domino\data\admin4.nsf recovered.


C:\Lotus\Domino>
```

d. All content of the database are now rolled forward to the last committed transaction found in the last archived transaction log.

vii. Restart Lotus Domino Server

9 Backup/Restore Microsoft Exchange Server 2000 / 2003

This chapter will describe in details how to use Ahsay Online Backup Manager to backup your Microsoft Exchange Server 2000 / 2003 and how you can restore your Microsoft Exchange Server 2000 / 2003 from the backup files.

9.1 Requirements

i. Microsoft Exchange Server 2000 with Services Pack 3 and post-SP3 update rollup installed. Please refer to http://www.microsoft.com/exchange/ for more information.
or
Microsoft Exchange Server 2003.

ii. Ahsay Online Backup Manager must be installed onto the computer running Microsoft Exchange Server 2000 / 2003.

iii. Data from Microsoft Exchange Server will be backed up to a temporary directory before they are sent to Ahsay Offsite Backup Server. Please make sure you have sufficient space on your computer to store these data when you run the backup job.

9.2 Overview

A Microsoft Exchange Server 2000/2003 stores its data in Windows Active Directory as well as in its databases. To fully backup a Microsoft Exchange Server 2000/2003, you need to backup the following components:

i. **Windows System State**
The Windows System State contains the information about your Windows system, including Windows Active Directory. A Microsoft Exchange Server 2000 / 2003 stores some of its configuration, e.g. email accounts and mailbox properties, inside Windows Active Directory. It is important that Windows Active Directory is backup properly when backing up a Microsoft Exchange Server.

Active Directory is stored inside a Windows Server running as Windows domain controller. If your Exchange Server is a domain controller, you can simply backup the Windows System State of your Exchange Server. If your Exchange Server is running as a member server, you will need to install another copy of Ahsay Online Backup Manager onto the domain controller to backup the Windows System State of inside the domain controller.

For more information on Active Directory, please refer to
http://www.microsoft.com/windows2000/technologies/directory/ad/default.asp

ii. **Microsoft Information Store**
Exchange Server stores all emails and documents inside its databases, which are grouped together as storage groups inside Microsoft Information Store. It is important that Microsoft Information Store is fully backup when backing your Exchange Server.

iii. **Microsoft Site Replication Service**
Microsoft Site Replication Service is installed automatically when exchange server site replication feature is enabled. Microsoft Site Replication stores its runtime and configuration information inside its own database. If you are running your Exchange Server with Site Replication Service enabled, please make sure that you backup the site replication database as well.

iv. **Microsoft Key Management Service (Exchange 2000 only)**
Similarly, if you have setup your Exchange Server with Key Management Services enabled, please make sure that you backup the key management database as well.

Ahsay Online Backup Manager will backup your Microsoft Exchange Server by taking the following steps:

i. Run all Pre-Commands of this backup set

ii. If the backup type to run is [Database Backup type],

a. Windows System State will be backed up to a temporary directory specified in its backup set

b. All exchange database(s) selected are backed up to a temporary directory specified in its backup set

iii. If the backup type to run is [Transaction Log Backup type],

a. New transaction log extents generated since last backup will be copied to the temporary directory

iv. Remove transaction log extents backed up from the Exchange Server

v. Run all Post-Commands of this backup set

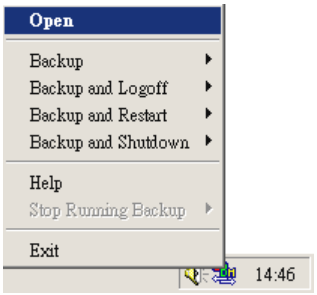
vi. Upload all backup files from the temporary directory to an Ahsay Offsite Backup Server

9.3 How to backup Microsoft Exchange Server 2000 / 2003

Please follow the instructions below to backup your Microsoft Exchange Server 2000 / 2003 using Ahsay Online Backup Manager:

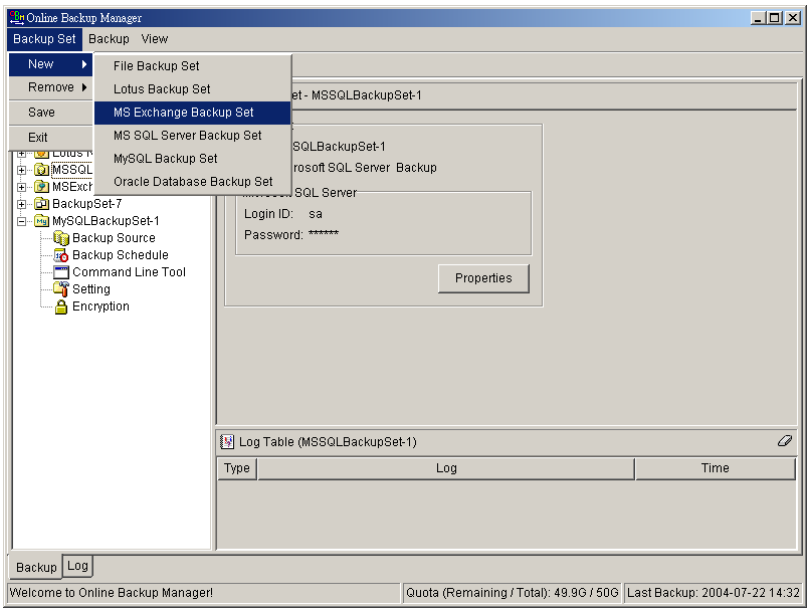
i. Open Ahsay Online Backup Manager

Right click Ahsay Online Backup Manager icon available in the system tray and choose [Open]

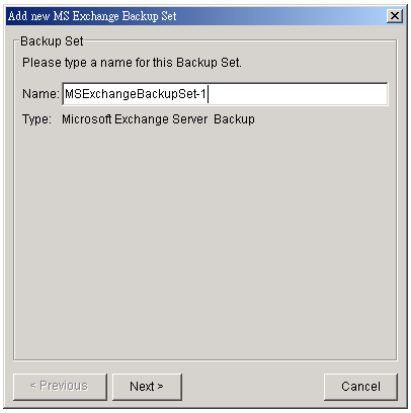


ii. From the Menu, Choose [Backup Set] -> [New] -> [MS Exchange Backup Set] Create a backup set

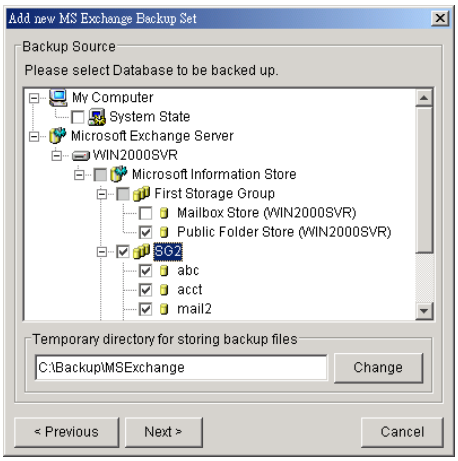
a. From the Menu, Choose [Backup Set] -> [New] -> [MS Exchange Backup Set]



b. Enter a name for your backup set



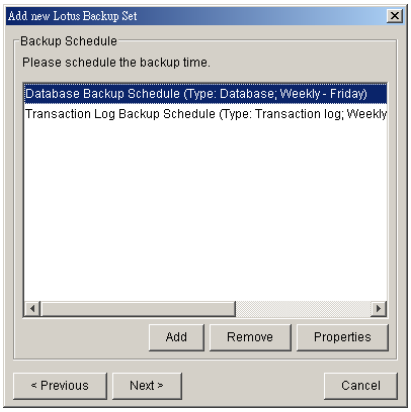
c. Select the database(s) to be backup



If this Exchange Server is also a domain controller of this Active Directory, select the [System State] checkbox as well. Otherwise, please install Ahsay Online Backup Manager to the domain controller of this Active Directory and select the [System State] checkbox on that computer

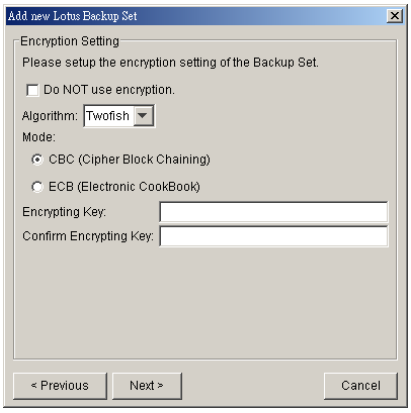
d. Enter a temporary directory for storing the backup files before they are sent to an Ahsay Offsite Backup Server

e. Set the backup schedule for Database Backup



f. Set the backup schedule for Transaction Log Backup (for Domino server only) (Note: You can have more than one schedule in a backup set, i.e. you can perform intra-day transaction log backup by adding more than one daily transaction log backup schedule to your backup set)

g. Set the encryption algorithm, encryption mode and encrypting key for this backup set

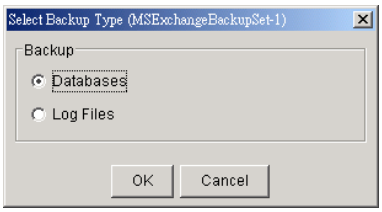


(Hint: For maximum security, please select AES (Advanced Encryption Standard) Algorithm, CBC (Cipher Block Chaining) mode and use an encrypting key with more than 8 characters.)

iii. Run Backup

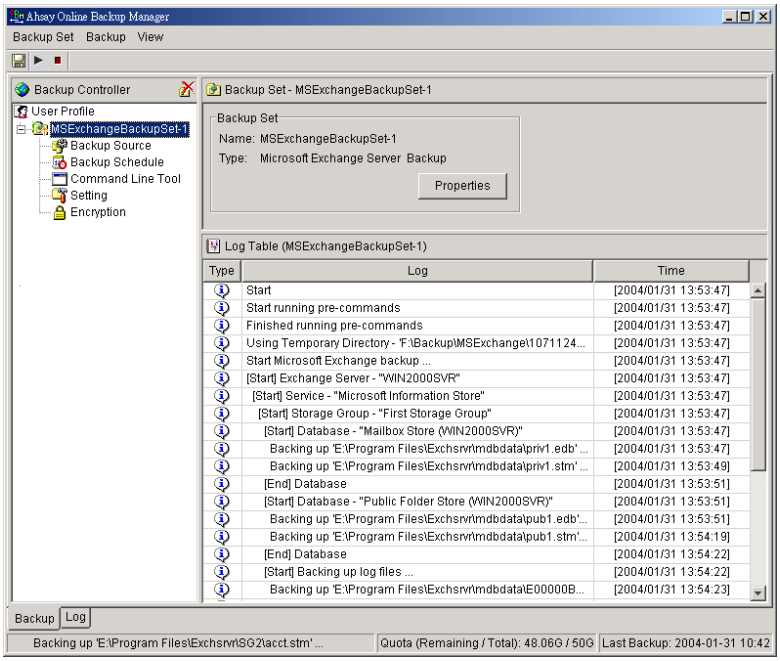
a. Select the backup set you want to run on the left panel and press the [Start Backup] button (►)

b. Select the backup type (e.g. Database, Log Files) you would like to perform



c. Select [Off-site Backup Server] to start backing up your files to an Ahsay Offsite Backup Server and press the [OK] button

d. You should get something similar to the screen shot below.



9.4 How to restore Microsoft Exchange Server 2000 / 2003

Please follow the instructions below to restore Microsoft Exchange Server 2000 / 2003 from an Ahsay Offsite Backup Server.

i. Prepare the system for your Exchange Server (if required)

Install the original version of Windows and Exchange Server (with the same level of service pack installed as in the original system) back to your computer

ii. Restore Windows Active Directory (if required)

If you have re-installed Windows, please download the Windows System State backup file, named [SystemState.bkf], from Ahsay Offsite Backup Server and then use [NTBackup.exe] to restore your Windows System State to its backup time from the backup file by following the instructions below:

a. Run [NTBackup.exe] from [Start] -> [Run]

b. Press the [Restore Wizard] button and then press the [Next] button

c. Press the [Import] button and use the [Browse] button to select the backup file [SystemState.bkf] downloaded

d. Select the checkbox next to the description that matches your backup file

e. Press the [Next] button and then the [Finish] button

iii. Install Ahsay Online Backup Manager (if required)

Please refer to the [Installation] section for information on how to install Ahsay Online Backup Manager onto your computer.

iv. Startup the [Microsoft Information Store] services from Windows Services

v. Restore exchange database(s) from backup:

a. Download the database backup files to be restored from the Ahsay Offsite Backup Server (or find the cached copy available in the temporary directory defined in your backup set) and save them to your hard disk (please make sure the directory structure is the same as it appears on the browser)

b. If the database to be restored exists on your computer already, please dismount it from the services using [Start] -> [Program] -> [Microsoft Exchange] -> [System Manager]

c. Use [ExchangeRestore.exe] from the [bin] directory under the installation directory of Ahsay Online Backup Manager (e.g. C:\Program Files\AhsayOBM\bin\ExchangeRestore.exe) to restore the exchange database(s).

Simply run [ExchangeRestore.exe] to print the usage

ExchangeRestore.exe Usage:

```
C:\Program Files\AhsayOBM\bin> ExchangeRestore.exe

Microsoft Exchange Server 2000/2003 Backup Recovery Utility

Usage:
ExchangeRestore DIR=path SERVER=server TEMP=tempDir [SERVICE=service [STORAGE=st
orage [DATABASE=database]]]

  DIR       Directory containing all backup files
  SERVER    Name of Exchange Server to be restored
  TEMP      Temporary directory to be used during restore
            Please specific a path with plenty of free space
  SERVICE   Name of Exchange Service to be restored. It must be either
            "Microsoft Information Store", "Microsoft Key Management Service"
            or "Microsoft Site Replication Service"
  STORAGE   Name of storage group to be restored
  DATABASE  Name of database to be restored

Examples:
1. To restore an exchange server:
   ExchangeRestore DIR="C:\Backup" SERVER="ExchangeServer" TEMP="C:\Temp"

2. To restore the information store:
   ExchangeRestore DIR="C:\Backup" SERVER="ExchangeServer" TEMP="C:\Temp"
     SERVICE="Microsoft Information Store"

3. To restore an exchange storage group:
   ExchangeRestore DIR="C:\Backup" SERVER="ExchangeServer" TEMP="C:\Temp"
     SERVICE="Microsoft Information Store" STORAGE="StorageGroup1"

4. To restore an exchange database:
   ExchangeRestore DIR="C:\Backup" SERVER="ExchangeServer" TEMP="C:\Temp"
     SERVICE="Microsoft Information Store" STORAGE="StorageGroup1"
     DATABASE="Database1"
where
  "C:\Backup"       is the directory containing all backup files
  "ExchangeServer"   is the server name of an exchange server
  "C:\Temp"         is the temporary directory to be used
  "StorageGroup1"   is the name of a storage group
  "Database1"       is the name of a database
```

d. (Example 1) To restore all databases from backup available in [F:\Backup] to an exchange server named [WIN2000SVR] using the temporary directory [F:\Temp], you can use this command:

E:\Program Files\AhsayOBM\bin> ExchangeRestore DIR="F:\Backup" TEMP="F:\Temp" SERVER="WIN2000SVR"

Exchange Server Recovery Example:

```
E:\Program Files\AhsayOBM\bin> ExchangeRestore DIR="F:\Backup" TEMP="F:\Temp"
SERVER="WIN2000SVR"

Microsoft Exchange Server 2000/2003 Backup Recovery Utility

 [Start] Exchange Server - 'WIN2000SVR'
  [Start] Service - 'Microsoft Information Store'
   [Start] Storage Group - 'First Storage Group'
    [Start] Database - 'Mailbox Store (WIN2000SVR)'
     Restoring file 'E:\Program Files\Exchsrvr\mdbdata\priv1.edb' ...
     Restoring file 'E:\Program Files\Exchsrvr\mdbdata\priv1.stm' ...
    [End] Database - 'Mailbox Store (WIN2000SVR)'
    [Start] Database - 'Public Folder Store (WIN2000SVR)'
     Restoring file 'E:\Program Files\Exchsrvr\mdbdata\pub1.edb' ...
     Restoring file 'E:\Program Files\Exchsrvr\mdbdata\pub1.stm' ...
    [End] Database - 'Public Folder Store (WIN2000SVR)'
    [Start] Restoring transaction log - 'First Storage Group'
     Restoring Log File 'F:\Temp\restore.tmp\First Storage Group\E00000B3.log' ...
     Restoring Log File 'F:\Temp\restore.tmp\First Storage Group\E00000B4.log' ...
    [End] Restoring transaction log - 'First Storage Group'
    [Start] Applying transaction log ...
    [End] Applying transaction log
   [End] Storage Group - 'First Storage Group'
.....
   [Start] Storage Group - 'SG2'
    [Start] Database - 'acct'
```

```
    Restoring file 'E:\Program Files\Exchsrvr\SG2\acct.edb' ...
    Restoring file 'E:\Program Files\Exchsrvr\SG2\acct.stm' ...
   [End] Database - 'acct'
   [Start] Restoring transaction log - 'SG2'
    Restoring Log File 'F:\Temp\restore.tmp\SG2\E0100072.log' ...
    Restoring Log File 'F:\Temp\restore.tmp\SG2\E0100073.log' ...
   [End] Restoring transaction log - 'SG2'
   [Start] Applying transaction log ...
   [End] Applying transaction log
  [End] Storage Group - 'SG2'
[End] Exchange Server - 'WIN2000SVR'

E:\Program Files\AhsayOBM\bin>
```

e. (Example 2) To restore the database named [mail] in storage group [SG5] from backup available in [F:\Backup] to an exchange server named [WIN2000SVR] using the temporary directory [F:\Temp], you can use this command:

E:\Program Files\AhsayOBM\bin> ExchangeRestore DIR="F:\Backup" TEMP="F:\Temp" SERVER="WIN2000SVR" SERVICE="Microsoft Information Store" STORAGE="SG5" DATABASE="mail1"

Exchange Server Recovery Example:

```
E:\Program Files\AhsayOBM\bin> ExchangeRestore DIR="F:\Backup" TEMP="F:\Temp"
SERVER="WIN2000SVR" SERVICE="Microsoft Information Store" STORAGE="SG5"
DATABASE="mail"

Microsoft Exchange Server 2000/2003 Backup Recovery Utility

   [Start] Storage Group - 'SG5'
    [Start] Database - 'mail'
     Restoring file 'E:\Program Files\Exchsrvr\SG5\mail.edb' ...
     Restoring file 'E:\Program Files\Exchsrvr\SG5\mail.stm' ...
    [End] Database - 'mail'
    [Start] Restoring transaction log - 'SG5'
     Restoring Log File 'F:\Temp\restore.tmp\SG5\E0300012.log' ...
     Restoring Log File 'F:\Temp\restore.tmp\SG5\E0300013.log' ...
    [End] Restoring transaction log - 'SG5'
    [Start] Applying transaction log ...
    [End] Applying transaction log
   [End] Storage Group - 'SG5'

E:\Program Files\AhsayOBM\bin>
```

f. Repeat the same procedure for each database to be restored to the Exchange Server.

g. You can use [Start] -> [Program] -> [Administrative Tools] -> [Event Viewer] to check if there are any errors generated from the exchange databases restoring activities.

vi. Completed

10 Backup/Restore MySQL Server

This chapter will describe in details how to use Ahsay Online Backup Manager to backup your MySQL server and how you can restore your MySQL server from the database backup files.

10.1 Requirements

i. Ahsay Online Backup Manager must be installed onto the computer running MySQL server.

ii. Data from MySQL server will be backed up to a temporary directory before they are sent to Ahsay Offsite Backup Server. Please make sure you have sufficient space on your computer to store these data when you run the backup job.

iii. There must be a MySQL account can be used to connect from localhost.

Add two new MySQL accounts for Ahsay Backup Manager

```
mysql> GRANT ALL PRIVILEGES ON *.* TO 'root'@'localhost'
    -> IDENTIFIED BY 'some_pass';
mysql> GRANT ALL PRIVILEGES ON *.* TO 'root'@'localhost.localdomain'
    -> IDENTIFIED BY 'some_pass';
mysql> FLUSH PRIVILEGES;
```

They are superuser accounts with full privileges to do anything with a password of some_pass.

10.2 Overview

Ahsay Online Backup Manager will backup your MySQL server by taking the following steps:

i. Run all Pre-Commands of this backup set

ii. All database(s) selected are backed up to a temporary directory specified in its backup set

iii. Run all Post-Commands of this backup set

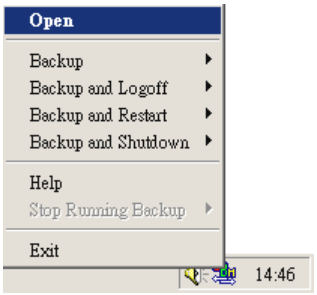
iv. Upload all backup files from the temporary directory to an Ahsay Offsite Backup Server

10.3 How to backup MySQL server

Please follow the instructions below to backup your MySQL server using Ahsay Online Backup Manager:

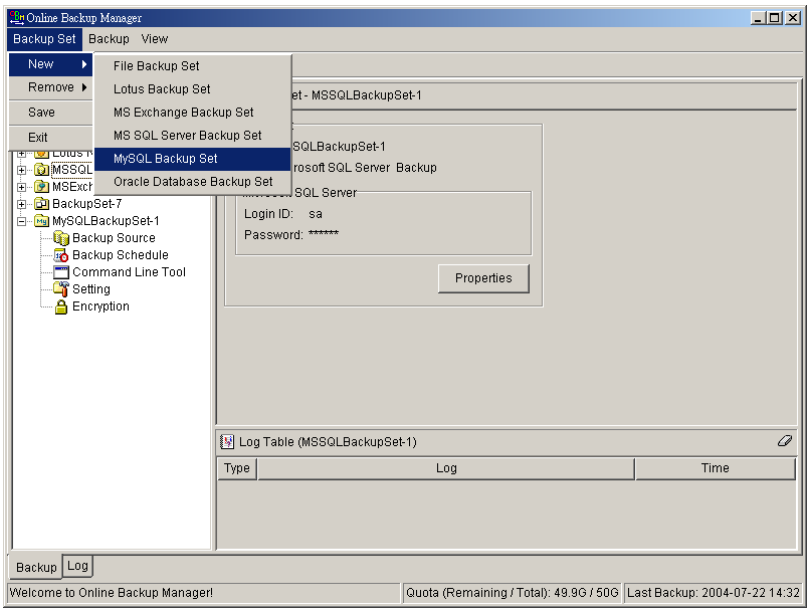
i. Open Ahsay Online Backup Manager

Right click Ahsay Online Backup Manager icon available in the system tray and choose [Open]

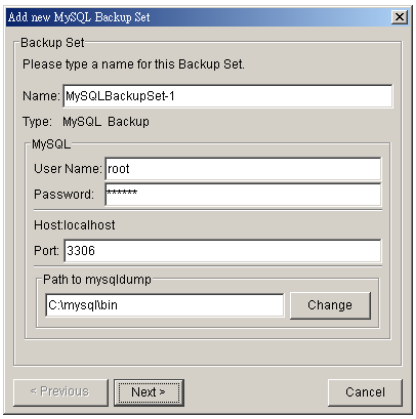


ii. From the Menu, Choose [Backup Set] -> [New] -> [MySQL Backup Set] Create a backup set

a. From the Menu, Choose [Backup Set] -> [New] -> [MySQL Backup Set]

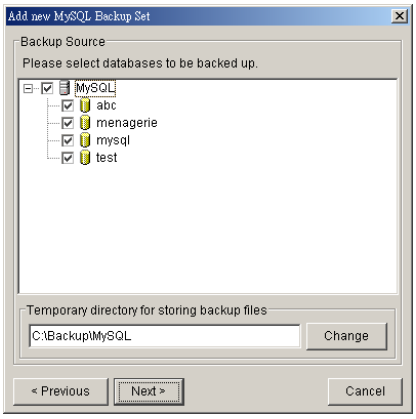


b. Enter a name for your backup set



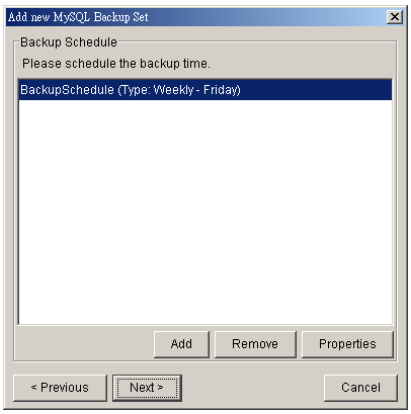
c. Enter the root password, the MySQL server TCP/IP port number and the path to MySQL backup utility (mysqldump)

d. Select the database(s) to be backup

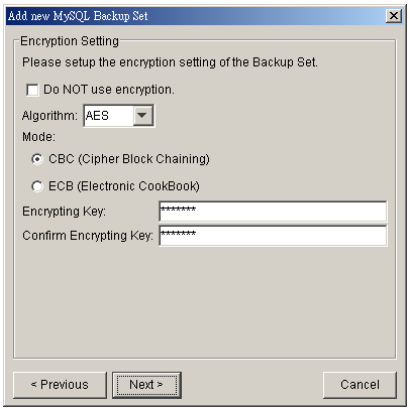


e. Enter a temporary directory for storing the backup files before they are sent to an Ahsay Offsite Backup Server, e.g. C:\Backup\MySQL

f. Set the backup schedule for Database Backup



g. Set the encryption algorithm, encryption mode and encrypting key for this backup set

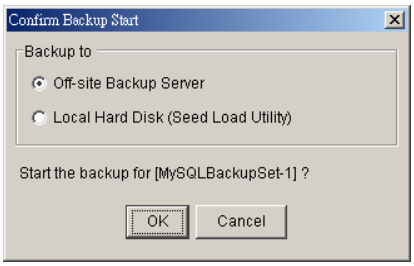


(Hint: For maximum security, please select AES (Advanced Encryption Standard) Algorithm, CBC (Cipher Block Chaining) mode and use an encrypting key with more than 8 characters.)

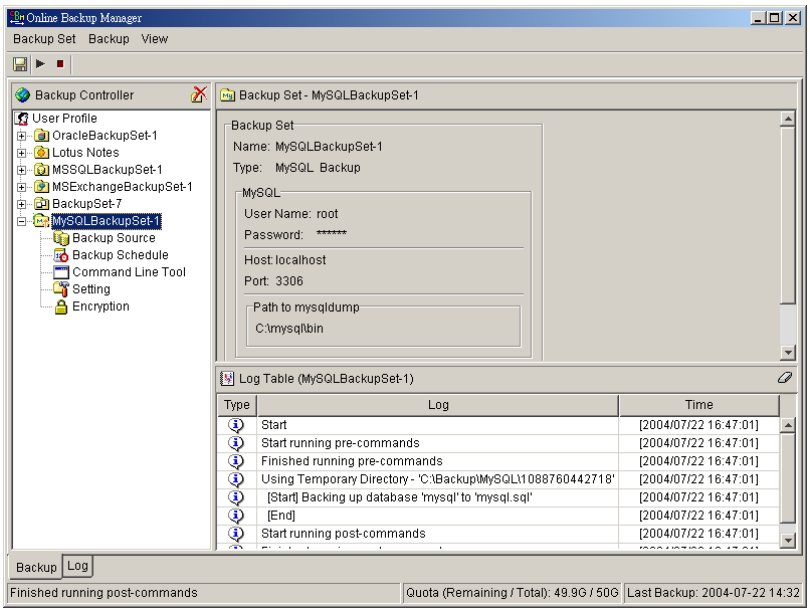
iii. Run Backup

a. Select the backup set you want to run on the left panel and press the [Start Backup] button (►)

b. Select [Off-site Backup Server] to start backing up your files to an Ahsay Offsite Backup Server and press the [OK] button



c. You should get something similar to the screen shot below.



10.4 How to restore MySQL server

Please follow the instructions below to restore MySQL server from an Ahsay Offsite Backup Server.

i. Download the database backup files to be restored from the Ahsay Offsite Backup Server

   Please refer to the [5.3 How to restore file] section for information on how to download backup files from Ahsay Offsite Backup Server.

ii. Restore the database named [db_name] from the database backup file [db_name.sql]:

   a. Connect to the MySQL server

      shell> mysql

   b. Create the database to be restored

      mysql> CREATE DATABASE IF NOT EXISTS db_name

   c. Restore the database backup file back into the MySQL server

      shell> mysql db_name < db_name.sql

iii. Repeat the same procedure for each database to be restored to the MySQL Server.

iv. Completed

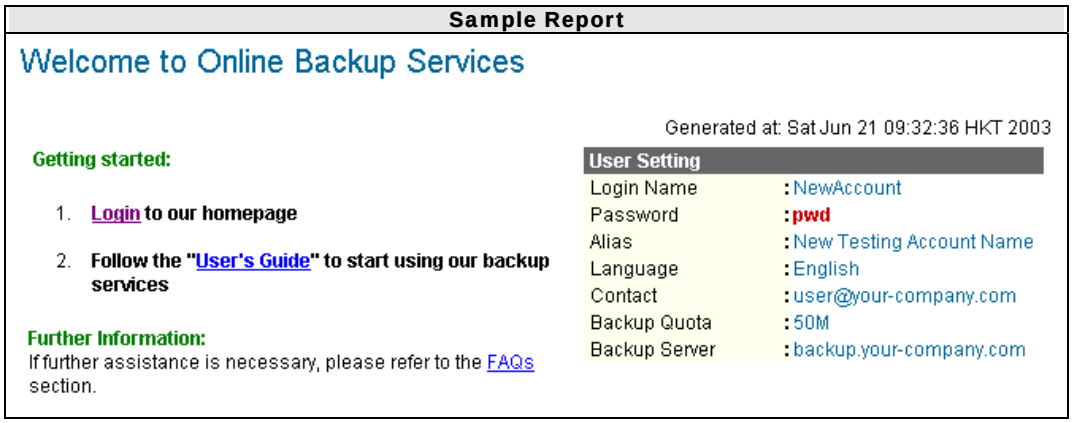
11 Email Reporting

Ahsay Offsite Backup Server makes use of the email system to keep you informed with the status of your backup activities. Please make sure your contact information within the backup system is correct to receive the reports described in this chapter.

11.1 New User Report

When a new backup account is added to the backup server, a new user report will be delivered to the contact email(s) of the new account. The New User Report contains the following information:

Sample Report



Welcome to Online Backup Services

Generated at: Sat Jun 21 09:32:36 HKT 2003

Getting started:

1. Login to our homepage
2. Follow the "User's Guide" to start using our backup services

Further Information:
If further assistance is necessary, please refer to the FAQs section.

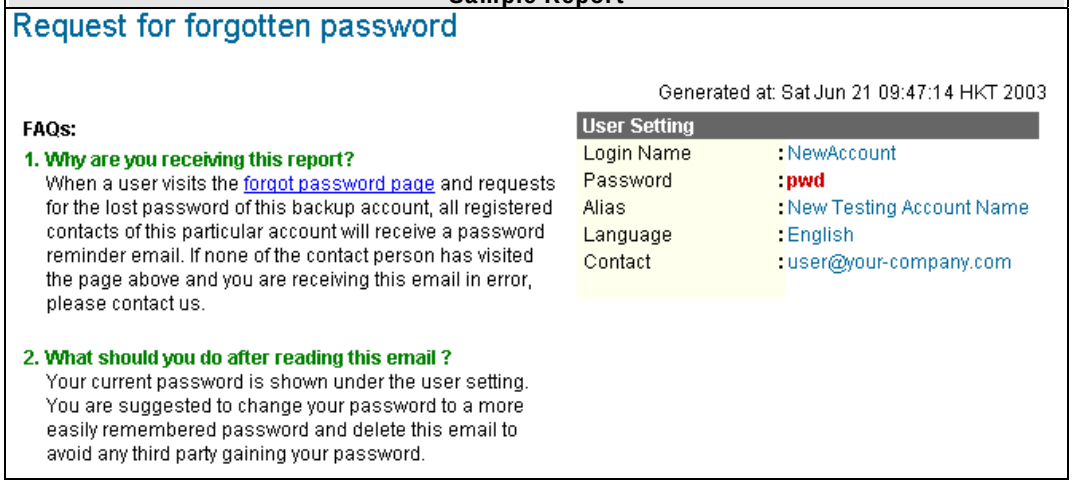
User Setting	
Login Name	: NewAccount
Password	: pwd
Alias	: New Testing Account Name
Language	: English
Contact	: user@your-company.com
Backup Quota	: 50M
Backup Server	: backup.your-company.com

Key	Description
Login Name	Login name
Password	Password
Alias	Alias
Language	Preferred Language for your backup report
Contact	Email Address that will be used to contact you
Backup Quota	Backup quota
Backup Server	Backup server

11.2 Forgot Password Report

If you have forgotten your password, you can use the [Forgot Password] feature available on the web interface to have your password delivered to you through email. (Please refer to "Retrieve Forgotten Password" section in the next chapter for more information on how to retrieve your forgot password report.) The Forgot Password Report contains the following information:

Sample Report



Request for forgotten password

Generated at: Sat Jun 21 09:47:14 HKT 2003

FAQs:

1. Why are you receiving this report?
When a user visits the forgot password page and requests for the lost password of this backup account, all registered contacts of this particular account will receive a password reminder email. If none of the contact person has visited the page above and you are receiving this email in error, please contact us.

2. What should you do after reading this email ?
Your current password is shown under the user setting. You are suggested to change your password to a more easily remembered password and delete this email to avoid any third party gaining your password.

User Setting

Login Name	: NewAccount
Password	: pwd
Alias	: New Testing Account Name
Language	: English
Contact	: user@your-company.com

Key	Description
Login Name	Login name
Password	Password
Alias	Alias
Language	Preferred Language for your backup report
Contact	Email Address that will be used to contact you

11.3 Backup Job Report

For each backup job you have run, a backup job report will be sent to you by email. This report contains a summary for the backup job that was run and a full listing of all files being backed up by the backup job. The backup summary report contains the following information:

Sample Backup Summary Report

Online Backup Job Report

Generated at: Sat Jun 21 10:00:05 HKT 2003

Backup Job Summary

Backup Time	: 21-Jun-2003 09:57 - 21-Jun-2003 09:57
Status	: **Backup finished successfully**
New Files*	: 1 [9k]
Updated Files*	: 1 [9k]
Deleted Files*	: 1 [4k]
Moved Files*	: 1 [3k]

* Unit = No. of Files [Total Size]

A full listing of all backup files is available in the attached file.

User Setting

Login Name	: NewAccount
Alias	: New Testing Account Name
Language	: English
Contact	: user@your-company.com

Backup Setting

Backup Source	: C:\My Document\

Backup Statistics

Backup Data Size*	: 7 [314k]
Retention Area Size*	: 2 [13k]
Backup Quota	: 50M
Remaining Quota	: 49.7M

* Unit = No. of Files [Total Size]

FAQs:

1. Why are you receiving this report?

You are receiving this report because you are registered as one of the contacts of this Online Backup account and this particular account has performed a backup job recently.

2. What if you have exceeded your quota?

If your recycle bin size is not empty, you can empty your recycle bin to free up more space. Please contact us for more information on how to increase your storage quota.

If further assistance is necessary, please refer to the FAQs section.

Key	Description
Backup Time	The time when the backup job ran
Backup Status	The overall status of the backup job. Normally, you should see "Backup finished successfully" in this field. If you happen to get something else, please consult the attached full report for more information.
New Files	Total number and size of backup files added to your backup set
Updated Files	Total number and size of backup files updated in your backup set
Deleted Files	Total number and size of backup files deleted from your backup set
Moved Files	Total number and size of backup files relocated in your backup set
Login Name	Login name
Alias	Alias

Language	Preferred Language for your backup report
Contact	Email Address that will be used to contact you
Backup Source	All files/directories that will be backed up
Backup Data Size	The total backup data stored in the data area
Retention Area Size	The total backup data stored in the retention area. Old copies of updated or deleted backup files are retained in the retention area for the number of days as specified by the retention policy of the backup set before they are removed from the system.
Backup Quota	Backup Quota
Remaining Quota	Remaining Quota

The full backup report, which contains a full listing of all files backed up by the backup job, is attached to the backup job report email as a zip file. You need to unzip it before you can read the full report.

Sample Report

Full Backup Report

Generated at: Sat Jun 21 10:00:05 HKT 2003

Backup Job Summary		
Backup Set	:	BackupSet-0
Backup Job	:	2003-06-21 (09:58)
Backup Status	:	**Backup finished successfully**
Backup Time	:	2003-06-21 09:57 - 2003-06-21 09:57

Backup Job Statistics	
New files*	1 [9k bytes]
Updated files*	1 [9k bytes]
Deleted files*	1 [4k bytes]
Moved files*	1 [3k bytes]

* Unit = Number of files [Total file size]

Backup Logs

No.	Type	Timestamp	Backup Logs
1	Info	2003-06-21 09:57	Start running pre-commands
2	Info	2003-06-21 09:57	Finished running pre-commands
3	Info	2003-06-21 09:57	Start running post-commands
4	Info	2003-06-21 09:57	Finished running post-commands

New Files *compressed

No.	Files	Size*	Last Modified
1	C:\Test\lib\New DANIEL.DOC	9k	2003-06-21 09:57

Updated Files *compressed

No.	Files	Size*	Last Modified
1	C:\Test\lib\DANIEL.DOC	9k	2003-06-21 09:57

Deleted Files *compressed

No.	Files	Size*	Last Modified
1	C:\Test\lib\DANIEL_A.BAK	4k	1996-11-29 18:45

Moved Files *compressed

No.	Files	Size*	Last Modified
1	C:\Test\KING1.BAK -> C:\Test\lib\KING1.BAK	3k	2003-06-05 12:35

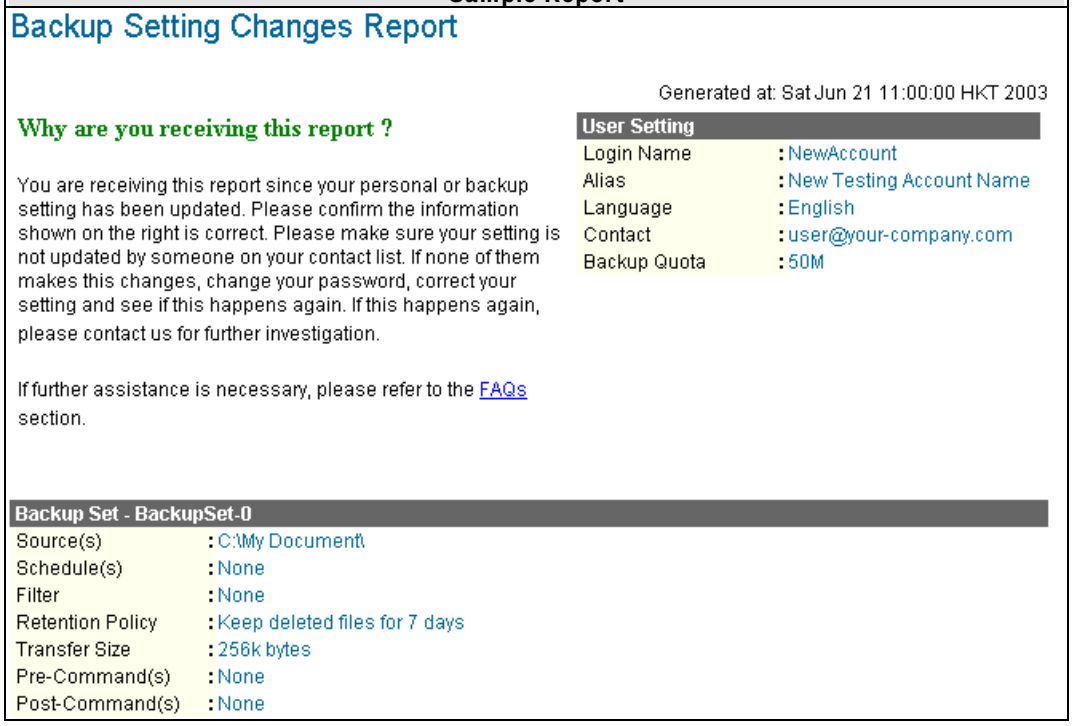
Key	**Description**
Backup Set	The name of the backup set
Backup Job	The name of the backup job (which is the start time of the backup job)
Backup Status	The overall status of the backup job. Normally, you should see "Backup finished successfully" in this field. If you happen to get something else, please consult the attached full report for more information.

Backup Time	The time when the backup job ran
Backup Log	All messages logged when running this backup job
New Files	Total number and size of backup files added to your backup set
Updated Files	Total number and size of backup files updated in your backup set
Deleted Files	Total number and size of backup files deleted from your backup set
Moved Files	Total number and size of backup files relocated in your backup set
New File List	Full list of all backup files added to your backup set
Updated File List	Full list of all backup files updated in your backup set
Deleted File List	Full list of all backup files deleted from your backup set
Moved File List	Full list of all backup files relocated in your backup set

11.4 Setting Change Report

After you have updated your user profile or backup setting, a setting change report will be sent to you. This report allows you to track record of the changes that have been made to your backup account.

Sample Report



Backup Setting Changes Report

Generated at: Sat Jun 21 11:00:00 HKT 2003

Why are you receiving this report ?

You are receiving this report since your personal or backup setting has been updated. Please confirm the information shown on the right is correct. Please make sure your setting is not updated by someone on your contact list. If none of them makes this changes, change your password, correct your setting and see if this happens again. If this happens again, please contact us for further investigation.

If further assistance is necessary, please refer to the FAQs section.

User Setting

Login Name	: NewAccount
Alias	: New Testing Account Name
Language	: English
Contact	: user@your-company.com
Backup Quota	: 50M

Backup Set - BackupSet-0

Source(s)	: C:\My Document\
Schedule(s)	: None
Filter	: None
Retention Policy	: Keep deleted files for 7 days
Transfer Size	: 256k bytes
Pre-Command(s)	: None
Post-Command(s)	: None

Key	Description
Login Name	Login name
Alias	Alias
Language	Preferred Language for your backup reports
Contact	Email Address that will be used to contact you
Backup Quota	Backup Quota
Backup Source(s)	All backup sources of the backup set
Backup Schedule(s)	All backup schedules of the backup set
Filter(s)	All backup filters of the backup set
Retention Policy	The retention policy of the backup set
Transfer Size	The transfer block size of the backup set
Pre-Command(s)	All Pre-Command(s) of the backup set
Post-Command(s)	All Post-Command(s) of the backup set

11.5 Inactive User Reminder

You will receive an inactive user reminder in email if your account has been left inactive for the period of 7 days (or the period specified by the system administrator). This is to remain you that you have not been running backup for more 7 days. If you are a free trial user, your account will be removed from the system automatically if the system can track no records of your backup activities in the next 30 days after receiving this report.

Sample Report

Inactive User Reminder

Generated at: Sat Jun 21 11:53:38 HKT 2003

Why are you receiving this report ?

You are receiving this report because this backup account has been inactive for 30 days. If this account stays inactive for another 30 days, this account will be removed from our system automatically without further notice. The following is the backup activity of this account:

Last Login Time : 2003-06-21 10:18 AM
Last Backup Time : 2003-06-21 09:57 AM

If further assistance is necessary, please refer to the FAQs section.

User Setting	
Login Name	: NewAccount
Alias	: New Testing Account Name
Language	: English
Contact	: user@your-company.com

Key	Description
Login Name	Login name
Alias	Alias
Language	Preferred Language for your backup reports
Contact	Email Address that will be used to contact you
Backup Quota	Backup Quota
Last Login Time	The last time you logon to the backup system
Last Backup Time	The last time you ran a backup job

12 Web Features

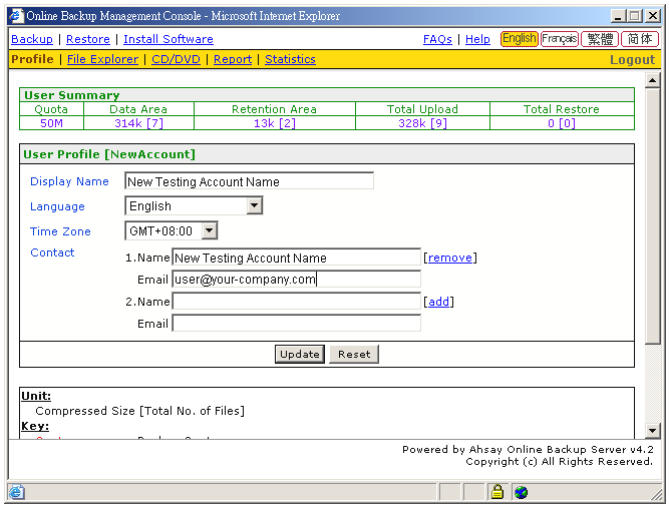
Other than the features of Ahsay Online Backup Manager described in the previous chapter, the web interface of Ahsay Offsite Backup Server provides you access to some additional features that are not available in Ahsay Online backup Manager. This chapter describes each of these features in details.

12.1 Install Ahsay Online Backup Manager

Before you can use Ahsay Online Backup Manager, you have to use the web interface of Ahsay Offsite Backup Server to install Ahsay Online Backup Manager onto your computer. Please refer to the installation section (Chapter 2) for information on how to install Ahsay Online Backup Manager onto your computer.

12.2 Update User Profile

You can update your user profile by using the [Profile] panel available on the web interface. To change your profile, just make any changes to your profit on the panel shown below and press the [Update] button.

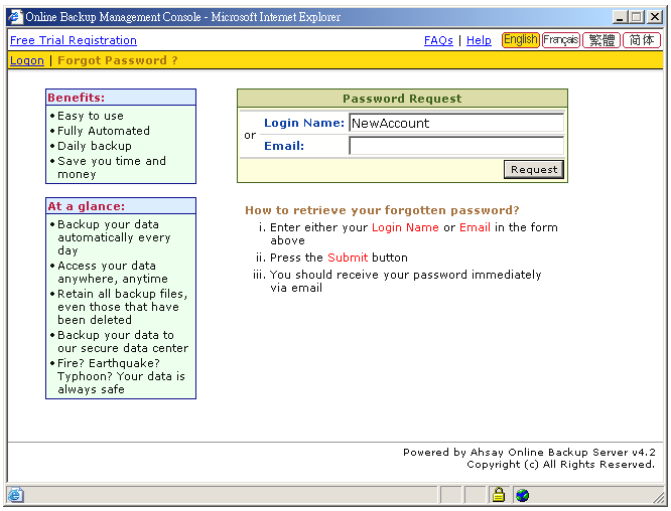


Key	Description
Quota	Backup Quota
Data Area	Total number and size backup files stored in the data area
Retention Area	Total number and size of backup files stored in the retention area
Total Upload	Total number and size of backup files uploaded to the backup server
Total Restore	Total number and size of backup files restored from the backup server
Login Name	Login name
Display Name	Alias of your backup account
Language	Preferred Language for your backup report
Time Zone	Your Time zone

Contact	Email Address that will be used to contact you

12.3 Request your forgotten password

If you have forgotten your password, you can retrieve it by simply entering your login name or your registered email address on the [Password Request] form and press the [Request] button. Your password will be sent to your registered email address automatically.



12.4 Restore/Delete Backup Files

You can restore your backup files from Ahsay Offsite Backup Server using the web interface. Please refer to the "How to restore files" section (Chapter 5.3) for information on how to restore backup files from Ahsay Offsite Backup Server.

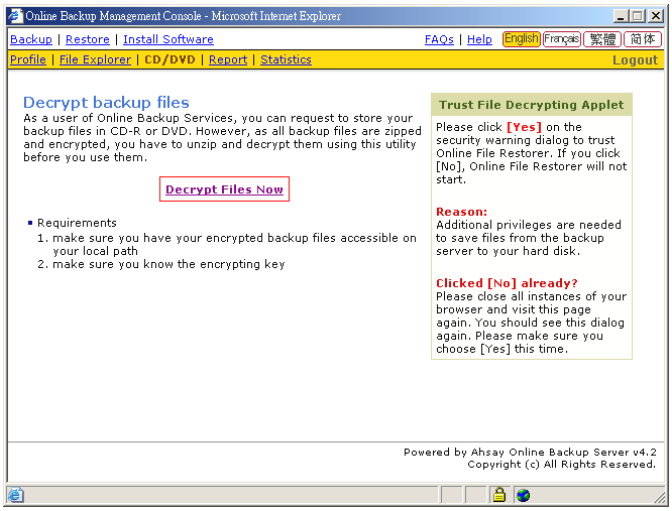
You can also delete your backup files from Ahsay Offsite Backup Server using the web interface. To delete a file/directory/whole backup set, simply check the checkbox next to the object you would like to delete and press the [Delete] button.

12.5 Decrypt backup files on CD/DVD

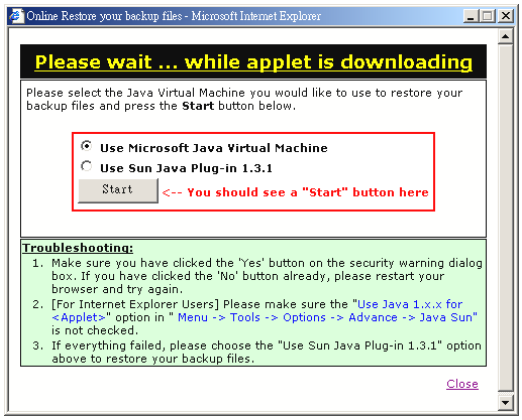
When you request your data stored on backup server to be delivered to you on CD or DVD, you have to decrypt and uncompress your backup files before you can use them. To decrypt and uncompress your backup files, please do the following:

i. Click the [CD/DVD] link available at the top menu

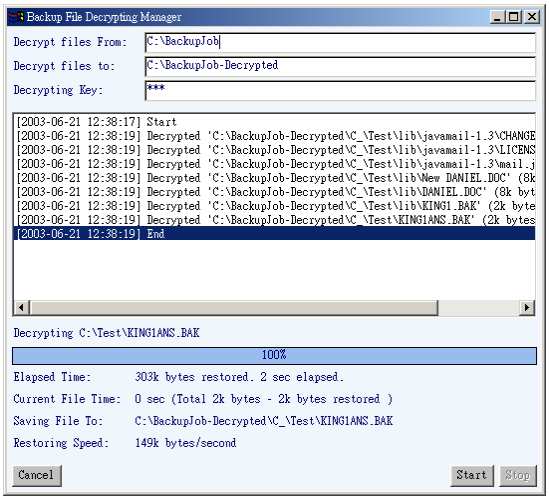
ii. Click the [Decrypt Files Now] link available at the centre of the page



iii. Choose either [Microsoft Java Virtual Machine] or [Sun Java Plug-in 1.3.1] and press the [Start] button



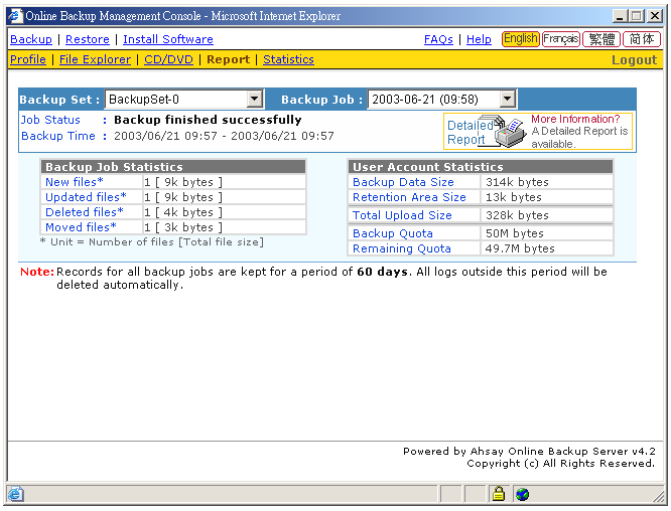
iv. Enter the source of your backup files in the [Decrypt files From] text field, destination of the decrypted output in the [Decrypt files to] text field and the encrypting key in [Decrypting Key] text field



v. Press the [Start] button

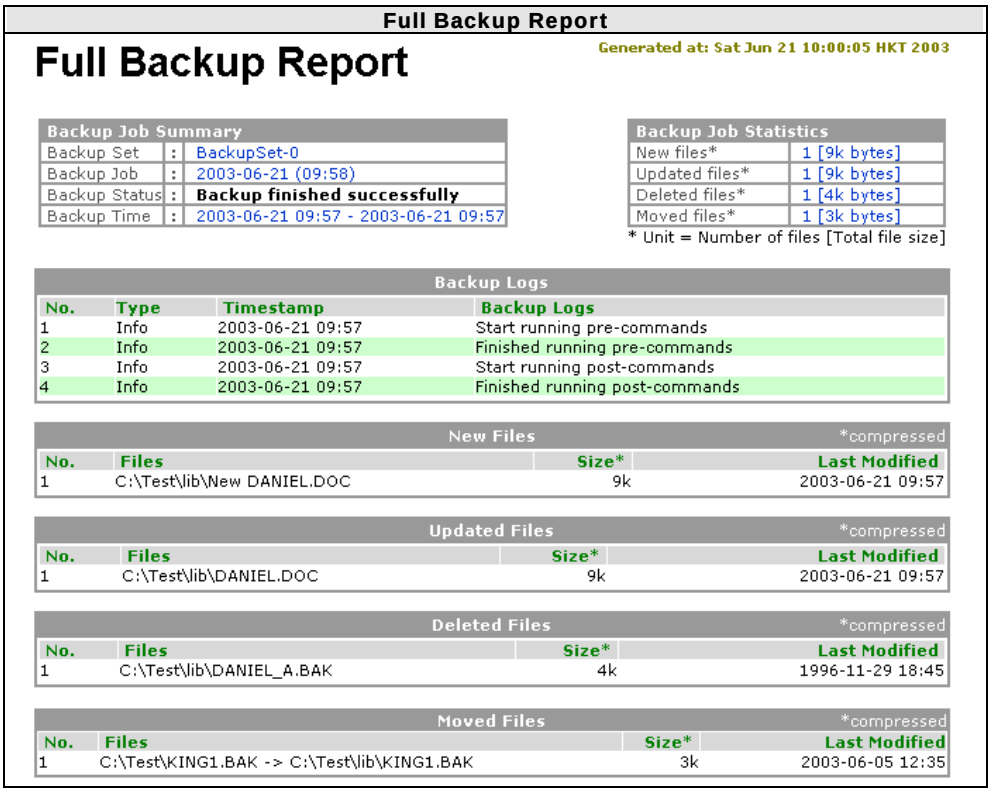
12.6 Review backup jobs

In addition to reviewing your backup activities from the email report and from Ahsay Online Backup Manager, you can also review any of your backup jobs by using the [Report] panel available on the web interface. To review a backup job, just select the required backup job from the [Backup Set] and [Backup Job] drop down list.



Key	Description
Job Status	The overall status of the backup job. Normally, you should see "Backup finished successfully" in this field. If you happen to get something else, please click the [Detailed Report] images on the page.
Backup Time	The time when the backup job ran
New Files	Total number and size of backup files added to your backup set
Updated Files	Total number and size of backup files updated in your backup set
Deleted Files	Total number and size of backup files deleted from your backup set
Moved Files	Total number and size of backup files relocated in your backup set
Backup Data Size	The total backup data stored in the data area
Retention Area Size	The total backup data stored in the retention area. Old copies of updated or deleted backup files are retained in the retention area for the number of days as specified by the retention policy of the backup set before they are removed from the system.
Total Upload	Total number and size of backup files uploaded to the backup server
Backup Quota	Backup Quota
Remaining Quota	Remaining Quota

You can open the [Full Backup Report] to review all information logged by a backup job by clicking the [Detailed Report] image on the [Report] panel.



Full Backup Report

Full Backup Report

Generated at: Sat Jun 21 10:00:05 HKT 2003

Backup Job Summary		
Backup Set	:	BackupSet-0
Backup Job	:	2003-06-21 (09:58)
Backup Status	:	**Backup finished successfully**
Backup Time	:	2003-06-21 09:57 - 2003-06-21 09:57

Backup Job Statistics	
New files*	1 [9k bytes]
Updated files*	1 [9k bytes]
Deleted files*	1 [4k bytes]
Moved files*	1 [3k bytes]

* Unit = Number of files [Total file size]

Backup Logs

No.	Type	Timestamp	Backup Logs
1	Info	2003-06-21 09:57	Start running pre-commands
2	Info	2003-06-21 09:57	Finished running pre-commands
3	Info	2003-06-21 09:57	Start running post-commands
4	Info	2003-06-21 09:57	Finished running post-commands

New Files *compressed

No.	Files	Size*	Last Modified
1	C:\Test\lib\New DANIEL.DOC	9k	2003-06-21 09:57

Updated Files *compressed

No.	Files	Size*	Last Modified
1	C:\Test\lib\DANIEL.DOC	9k	2003-06-21 09:57

Deleted Files *compressed

No.	Files	Size*	Last Modified
1	C:\Test\lib\DANIEL_A.BAK	4k	1996-11-29 18:45

Moved Files *compressed

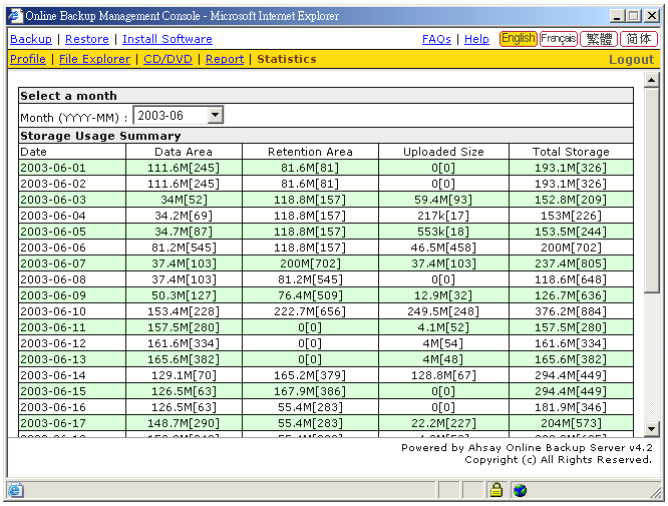
No.	Files	Size*	Last Modified
1	C:\Test\KING1.BAK -> C:\Test\lib\KING1.BAK	3k	2003-06-05 12:35

Parameter	Description
Backup Set	The name of the backup set
Backup Job	The name of the backup job (which is the start time of the backup job)
Backup Status	The overall status of the backup job.
Backup Time	The time when the backup job ran
Backup Log	All messages logged when running this backup job
New Files	Total number and size of backup files added to your backup set
Updated Files	Total number and size of backup files updated in your backup set
Deleted Files	Total number and size of backup files deleted from your backup set
Moved Files	Total number and size of backup files relocated in your backup set
New File List	Full list of all backup files added to your backup set
Updated File List	Full list of all backup files updated in your backup set
Deleted File List	Full list of all backup files deleted from your backup set
Moved File List	Full list of all backup files relocated in your backup set

12.7 Review storage statistics

You can review the amount of data you have stored on the backup server and uploaded to the

backup server on each day by opening the [Statistics] panel available on the web interface. To review your storage statistics for a different month, just select the month you are after by selecting from the [Month] drop down list.



Key	Description
Date	The date the following statistics are collected
Data Area	Total number and size of backup files stored in the data area on a particular date
Retention Area	Total number and size of backup files stored in the retention area on a particular date
Uploaded Size	Total number and size of backup files uploaded to the backup server on a particular date
Total Storage	Total number and size of backup files stored under your backup account on a particular date

13 Frequently Asked Questions

13.1 How do I uninstall Ahsay Online Backup Manager?

To uninstall Ahsay Online Backup Manager from your computer, just run %INSTALL_DIR%\bin\uninstall.bat (default location is C:\Program Files\AhsayOBM\bin\uninstall.bat).

13.2 How is data privacy maintained?

All data are encrypted with user's defined encrypting key before they are sent to the online backup server. Without the encrypting key, the backup files are useless to anyone. The backup user is the only person who can decrypt the backup files to reveal the original content.

13.3 How do we backup "Open Files"?

Files should never be backed up while they are open by an application. When an application is running, it stores its data both in system memory and in data files. Backup by copying the data files while an application is running would fail to capture the application data stored in system memory in the backup job. Not only is it backing up less data than what should be backed up, it can also lead to data inconsistency that can finally result in backup files being unusable by the application.

The correct and the only right way to backup an application is to shutdown the application before running a backup job (unless hot backup is supported). When an application is shutdown, it frees all its acquired system memory and flushes all application data from system memory to its data files. The data files now contain everything needed to start an application successfully. Backing up application data files when it is shutdown will guarantee data consistency and backup files recoverability. You can use Pre-Backup command and Post-Backup command to shutdown and restart application before/after a backup operation.

If you really want to backup your files while they are open, Ahsay Online Backup Manager can work with St. Bernard (http://www.stbernard.com/) Open File Manager to provide open file backup support. Please contact us if you need more information.

13.4 What should I do if a backup error is reported in my backup report?

i. Check if this is a configuration problem (e.g. network problem, proxy setting problem)

ii. Check error log and activity log which can be located in C:\Program Files\AhsayOBM\log (default location) for more information

iii. Try running backup again manually to see if the same error occurs

13.5 How do I backup 300GB of data through the Internet?

Please refer to the Seed Loading Utility section for more information.

14 Common Errors

14.1 The process cannot access the file because it is being used by another process

Full Message
[Error][New File] File='C:\xxx' Error='C:\xxx (The process cannot access the file because it is being used by another process)'

Explanation
This means that the file above is currently locked by another process (or program). Please advice the user to shutdown the program locking this file before running the online backup program again. You can also refer to our FAQs – How do we backup "Open Files"? section for more information.

14.2 Access is denied

Full Message
[Error][New File] File='C:\xxx' Error='C:\xxx (Access is denied)'

Explanation
This means that the file above is not accessible by the backup program. Please check if the backup program has read access permission to the file above.

14.3 Quota Exceeded

Full Message
Quota Exceeded

Explanation
This means that the backup account has run out of its allocated quota. Please contact your administrator (or backup services provider) to increase your backup quota.

14.4 Source file does not exist. Index corrected.

Full Message
[BackupSetFileSystem.move] Source file 'C:\xxx\yyy\zzz' (Path 'C:\aaa\bbb\ccc\ ') does not exist. Index corrected.

Explanation
This problem normally implies that there is something wrong with the backup setting. Please logon to the web interface of Ahsay Offsite Backup Server and check the [Backup Sources] and the [Backup Filter] setting. Please pay special attention to the case of the directories configured.

14.5 Checksum incorrect

Full Message
Checksum incorrect. File 'C:\xxx' Recd=1111111111 Cald=2222222222

Explanation
All files stored on the backup server are first verified before they are written to disk. This error indicates that the backup file uploaded is corrupted, as the checksum calculated from the receiving end does not match the one generated from the transmitting end. Please check if there was anything wrong with the network at the time this error occurred.

15 Appendixes

15.1 Further Information

If you need any additional information, please contact us by support@ahsay.com.